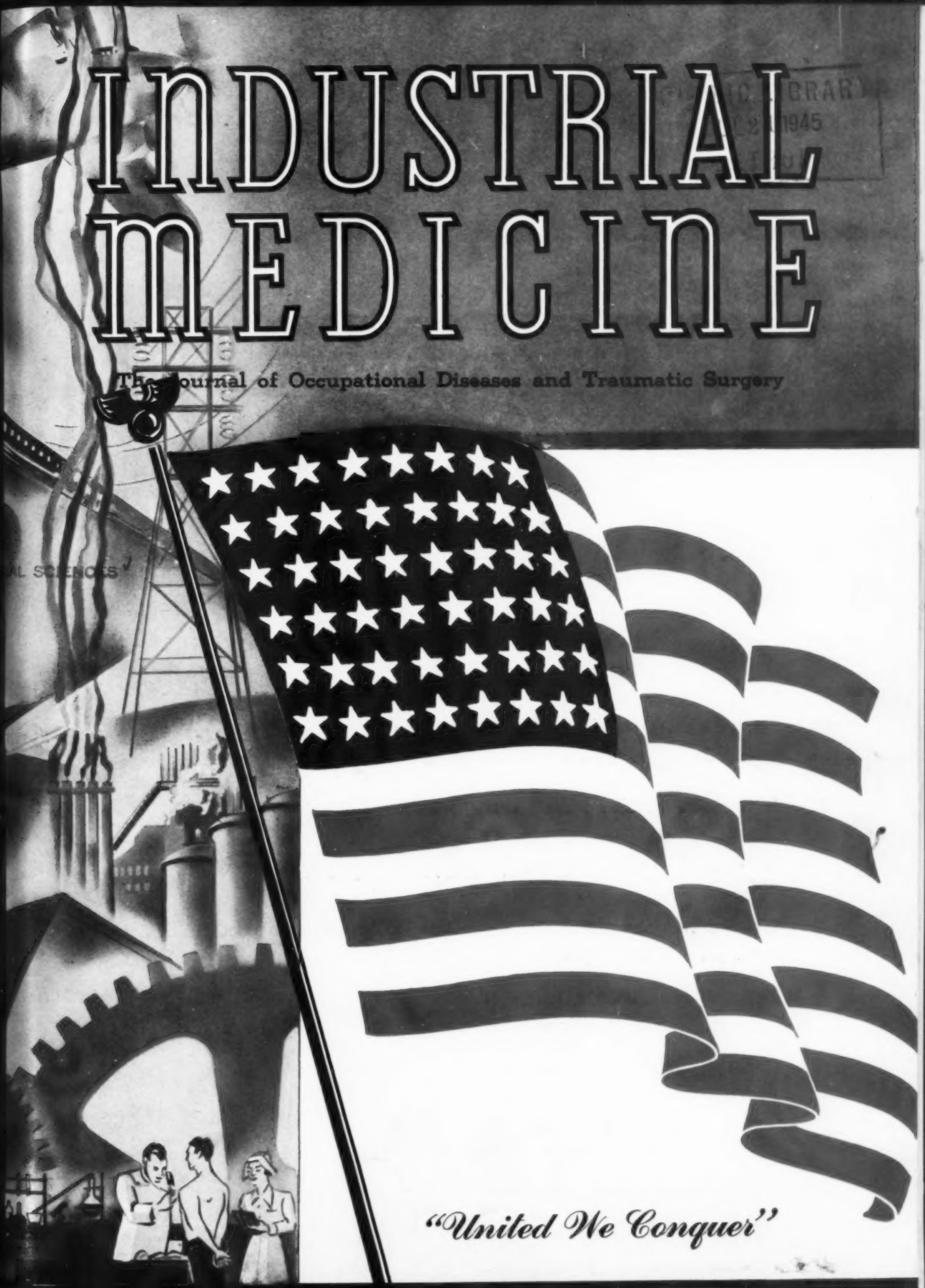
INDUSTRIAL MEDICINE

The Journal of Occupational Diseases and Traumatic Surgery



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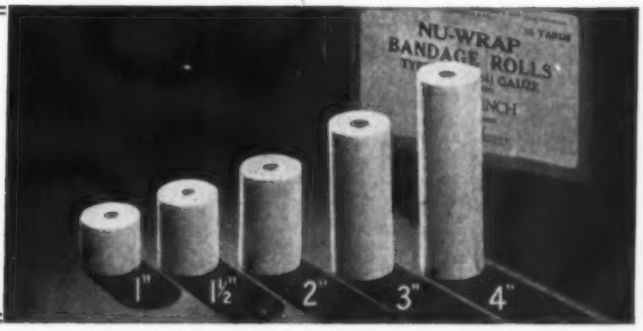

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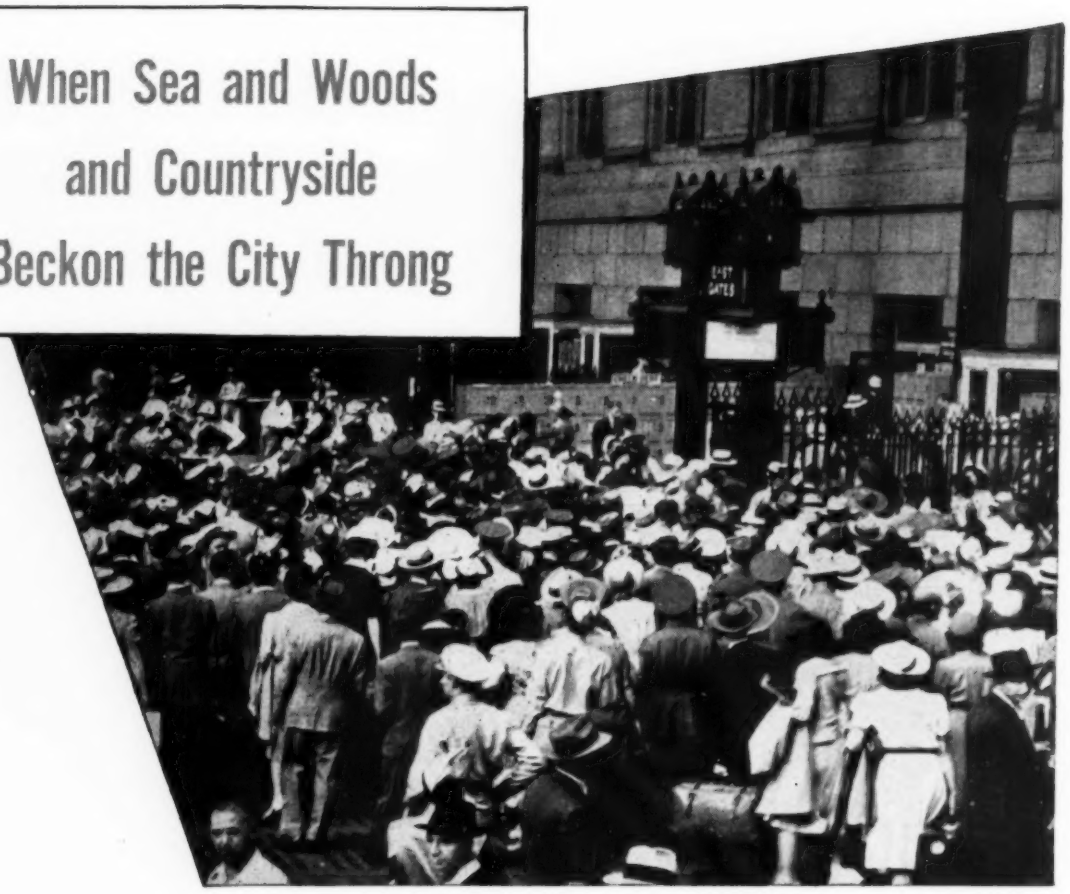

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COLONEL ANDREWS writes, with reference to his "Comprehensive Planning for Veterans" (page 557) that the "12,000,000 in Service" represent the number at the time Germany surrendered, and that "by the time Japan is defeated 14,000,000 to 15,000,000 will have served in the Armed Forces." He also calls attention to one group about which there has been much discussion and exaggeration. This group is represented by those who have been given the much-talked-about "mental discharges." He says: "In most cases, these persons showed no unusual emotional traits until they were subjected to the requirements of military training and discipline or to strenuous combat service. After being released from service, most of these veterans will make a complete and satisfactory readjustment to civilian life. One of the great opportunities of the medical profession will be to help bring about a better understanding of this group, and thus facilitate their complete reintegration into the normal life of the community. In the cases of men who have received serious mental shocks as a result of their war experience, the greatest possible service should be provided in helping them regain their emotional stability. This will involve the extensive use of the most expert professional services available in diagnosing and rehabilitating the patient, and in properly placing him in a position which will be within his capacity, and will offer him an opportunity to challenging work under conditions that will involve no hazard to himself or to others." What COLONEL ANDREWS says in this respect is strongly reinforced in the sixth, and last, of the series on "Re-employment of Ex-Service Men and Women" published by Associated Industries of New York. Having previously included in these pages the five titles originally planned, we

—Continued on page 6.

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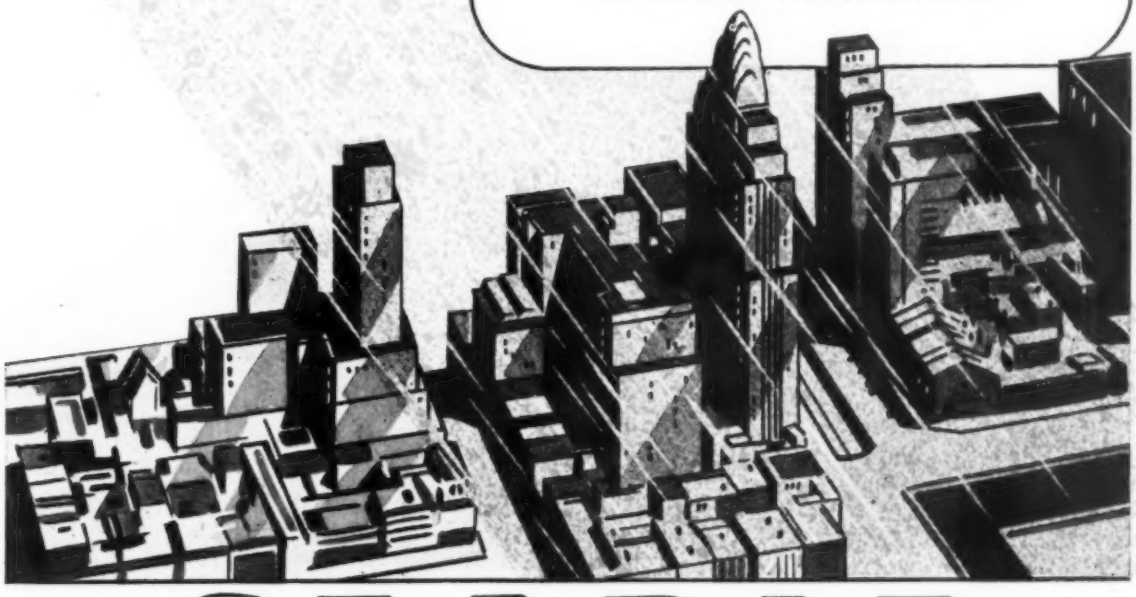

SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

—Continued from page 3.
also now include the sixth (page 572), with all due credit to the sources. This one is entitled "The Soldiers Say Don't Do It!" And it is very much worth keeping in mind! . . . IN THE extract (page 50) from the discussion of "Medical Service Plans" by DR. ROBERT S. YOUNG, there is a remarkably clear exposition of the philosophy behind such proposals as that of the Wagner-Dingell bill. DR. YOUNG says, in part, "The political power that is inherent in all social insurance is doubly present and must be reckoned with in health insurance, for, in the minds of the people, medicine has not been divorced of superstition and emotion. Bismarck, when chancellor of Germany, devised social insurance for the purpose of controlling the masses. It was his thought that if they were subjected to a program of excessive taxation their savings would be taken away and they would be unable to provide for themselves in old age, periods of unemployment, sickness, or dependency. If protection was then provided through social insurance, easily given or withheld by quasi legal means, the people would be forced to follow the dictates of the state because the alternate of private resources had been removed. This theory has been followed by many governments, especially those controlled by dictators. . . . In the United States, coupled with progressive taxation, the same trend is evident in the Wagner-Murray-Dingell Bill for the extension of social security to cover medical care. This is apparently a part of an extensive program which includes not only the socialization of medicine, but also, to some degree, the socialization and control of industry, agriculture, and lately signs of a move toward control of labor unions is becoming evident." In the arguments against "compulsory" health insurance, it should not only be remembered, *but also should be talked about and urged at every possible opportunity,* that this kind of health protection (sic) is being advocated in small part for itself and in large part for its effect in the "extensive program," which is still rampant in the minds of too many un-Americans, to "control the masses." It is due the American people to find out *who*—by name and position, nativity, background and education—are urging this "extensive program," and *why* they are doing it. Such an investigation—it would have to be privately conducted at this time—would uncover much interesting and enlightening information. . . .DR. GROLNICK'S paper on "The Sensitized Skin" (page 595) was presented at the last meeting of the ASSOCIATION FOR THE ADVANCEMENT OF INDUSTRIAL MEDICINE AND SURGERY. . . . FROM Chicago to Hawaii to Chicago is the background of "The Total Health Program" (page 602). There is a pertinent question in this article: "How can the forces of health education rise to this stupendous task of making man's health habits the kind that will save him from destroying himself?" One way to do it long range would be to set up the means of a national program of health education—to begin with school children and follow through the entire minor years. This would *build* health. The present proposals, however, don't intend any such constructive measures; the process would be too slow for their "extensive program." They prefer, as it were, to confirm the ill health by providing government care for it. That, of course, is part of the plan to socialize the present generation.

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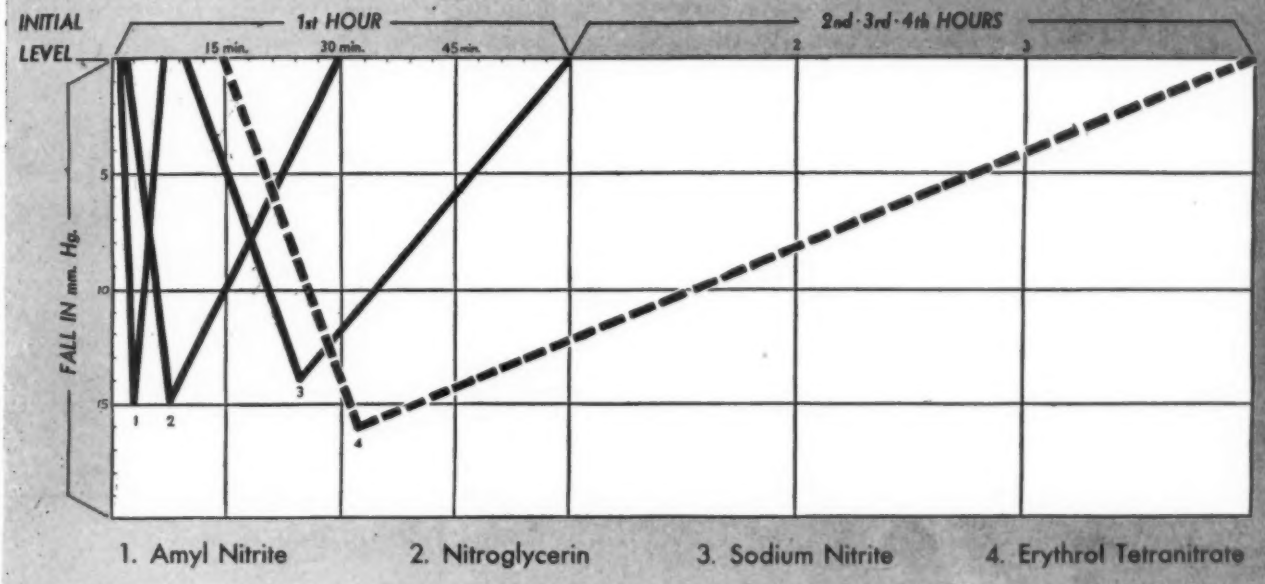

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PERSONAL

RUTHERFORD T. JOHNSTONE, M.D., announces the opening of his Clinic for Occupational Diseases and Industrial Health, 727 West Seventh Street, Los Angeles 14, California.

DR. O. L. MCHAFFIE has been appointed Chief Surgeon of the Duluth, Missabe & Iron Range Railway, with headquarters at the West Duluth Clinic. DR. R. F. MUELLER has been appointed Associate Surgeon, with headquarters at Two Harbors, Minnesota.

DR. C. D. SELBY, medical consultant, General Motors Corporation, a member of the National Health Advisory Council, serving in an advisory capacity to the Surgeon General of the U. S. Public Health Service, met with the other members June 19 and 20 at Bethesda, Maryland, in the first meeting of the Council since the passage of the Public Health Service Act of 1944. The meeting reviewed present and postwar plans of various Public Health Service Divisions and offered recommendations in regard to conditions resulting from the war.

DR. R. L. HAGAMAN, Local Surgeon, Raymond, Mississippi, was one of the 25 veteran members of the Illinois Central System personnel who, on June 15, were given gold passes marking a half century of railway service. The presentation was made by WAYNE A. JOHNSTON, president, at a luncheon at the Stevens Hotel.

SURGEON GENERAL THOMAS PARRAN, of the Public Health Service, Federal Security Agency, which administers the U. S. Cadet Nurse Corps, announced as of June 29 that during the last 12 months 61,471 new student nurses have enrolled in schools of nursing. This is the second consecutive year the corps has exceeded its recruitment quota.

GORDON C. HARROLD, PH. D., on July 1, 1945, became available for full-time consultation in matters of industrial hygiene and toxicology, having established his own offices for that purpose. He may be reached at 30 Elm Place, Webster Groves, St. Louis County, Missouri, although a considerable part of his time will be spent in Detroit.

ROBERT MONTGOMERY portrays the role of a close friend tonight on "The Doctor Fights" at 8:30 on WBBM-CBS. The friend, DR. H. H. KESSLER, a medical officer, will be listening from a naval hospital in Mare Island, California.

—*Chicago Daily News*, June 19, 1945.

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Medicolegal Conference

THE Department of Legal Medicine of the medical schools of Harvard, Tufts, and Boston University in association with the Massachusetts Medico-Legal Society will present a six-day program of lectures, conferences, and demonstrations having to do with the investigation of deaths, in the interests of public safety, at Boston, October 1-6, 1945. Attendance during five of the six days of the course will be limited to 15 persons who have registered in advance. On one day (October 3) the program will be open to any physician, lawyer, police official, or senior medical student who may care to attend. Further information may be obtained from the secretary of the Massachusetts Medico-Legal Society, 25 Shattuck Street, Boston.

Job Done

METROPOLITAN Life Insurance Company, announces that the tuberculosis sanitorium which it has maintained at Mount McGregor, New York, since 1913 for treatment of its tuberculous employees will be closed on September 1. Although a total of 3,507 Metropolitan employees have received treatment for tuberculosis since the sanatorium was opened, it was pointed out that the number of patients and the period of treatment have been reduced to a point which no longer justifies the maintenance of an institution of this size. Patients now at the sanatorium will be given treatment at the company's expense in comparable sanatoria nearer their homes. "The company feels great pride and satisfaction in thus announcing the successful achievement of the purpose it set out to accomplish in 1913. At that time tuberculosis was the 'white plague' and was causing great loss of time and life; the number of hospital beds reserved for its proper treatment was wholly inadequate; large numbers of persons sick with the disease awaited their turn to be placed

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*Gray, H. and Tainter, M. L.; *Am. J. Digest. Dis.* 8:130, 1941.

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Lead Poisoning in England

IN ENGLAND, according to the *British Medical Journal*, the number of cases of lead poisoning has shown a steady decline. This improvement is attributed to protective measures, such as suppressing of dust, dampening of floors, good exhaust ventilation; improved personal hygiene of the worker, and exclusion of women and children from specially dangerous processes; earlier recognition of the disease, supported by compulsory periodical medical examination and by improved methods of diagnosis. The most serious manifestation, according to this publication, is lead encephalopathy (injury to the brain). A less acute form, characterized by constipation and severe colic, sometimes accompanied by diarrhea, headache, and dizziness, may develop gradually from a condition of general weakness and lassitude, loss of weight, and aching of joints, or may make a sudden onset after a short period of extensive exposure to lead.

—*Lafayette, Indiana, Painter & Decorator*, June, 1945.

Health Grows in Brooklyn

FORT GREENE Industrial Health Committee, a Neighborhood Health Development unit in Brooklyn, represents local industries, labor unions, health and social agencies, physicians, dentists, Kings County Medical Society and the New York City Health Department. These groups join in one object—to make the Fort Greene district health conscious and to stir individuals and families to take advantage of every health facility the district affords. The Fort Greene District has a population of 207,867. In its more than

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[1]Cornbleet, T., Kirch, E. R., and Bergeim, O., Jl. A. M. A. 122: 426, June 12, 1943

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200 plants, most of them in war production, are 150,000 employees. Since old style health messages didn't seem to get across, industry and workers were drawn into a co-operative program. The Chairman is REGINALD E. GILLMORE, President of Sperry Gyroscope Company; the Co-Chairman is LOUIS HOLLANDER of the Amalgamated Clothing Workers' Union, and on the Committee are physicians, industrial administrators, and the District Health Officers. An active educational program is carried on. Management foots most of the bills; plant health committees see that bulletins and literature get to employees, that posters go on bulletin boards, and plan film and speaker programs; health agencies and medical men give professional knowledge and service. It all adds

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TO provide an organization, not for pecuniary profit, in which all agencies and societies, both medical and lay, concerned with the problems of industrial health can hold membership and can meet together in conference for the study, discussion and careful consideration of all industrial health problems and procedure; to engage in scientific research to determine the cause, nature, prevention and cure of diseases and injuries of occupations; to assist in establishing and supervising industrial health clinics to serve small industries; to establish and maintain hospitals which will furnish facilities for the care, treatment and study of occupational injuries and diseases; to make surveys of industrial medical services and recommendations for their improvement; to solicit, receive and administer funds for any purpose that will advance and/or improve industrial health; to establish undergraduate and/or post-graduate courses in industrial medicine and surgery and/or to cooperate with medical schools and industries in maintaining such courses; and to use all those means, which from time to time, may seem wise, for the advancement of industrial health.

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*Kroger, W. S., and Freed, S. C.: Am. J. Obst. & Gynec., 46:817 (December), 1943.

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up to a new health awareness among workers, a knowledge of how to prevent and combat tuberculosis, venereal disease, malnutrition, etc. Communities in other parts of the country have begun similar projects after watching the employee interest aroused. The full story of the aims and achievements of the Fort Greene Committee may be obtained from the Executive Director, JAY I. BOXER, Executive Director, Fort Greene Industrial Health Committee, 295 Flatbush Avenue Extension, Brooklyn 1, New York.

Eyesight in Industry

THE outstanding development in the field of sight conservation in industry has been the Society's participation in the War Production Board's drive to speed up production through improvement of visual conditions in the war industries. Cooperating in this program with the War Production Board, are the U. S. Public Health Service; the War Manpower Commission; the U. S. Department of Labor, Division of Labor Standards; and the Society. To date, 7,500 plants have received copies of the *Manual and Appraisal Form on Conservation and Utilization of Eyesight in Industry*, originally prepared by the Society, and many industries have availed themselves of the offer of assistance on visual problems relating to production and safety. This special advisory service and the preparation of information bulletins are being handled by the Society, under a non-profit contract with the War Production Board. A study of the 150 appraisal forms voluntarily returned by plants reveals that only 61% make the pre-placement vision tests necessary for correct job assignment. More than 75% of the plants where tests are made fail to have the testing done under the direction of an eye specialist, indicating lack of uniformity, and possible inaccuracy. Other facts disclosed, include: (1) more than 85% of the plants fail to re-check vision of all employees periodically; (2) more than 80% make no re-check of vision of workers exposed to special hazards; (3) 92% fail to re-check vision of employees with poor production records; (4) 83% do not re-check vision of workers involved in accidents; and (5) 73% make no re-checks where original vision test disclosed need of follow-up. Of the plants reporting, 58% indicate that they use the employee's personal reading prescription for work glasses—despite the fact that it is estimated that in 19 cases out of 20, the worker's personal reading glasses are unsuitable for the job. Only 8% have prescription for work glasses written in the plant by the company examiner, although knowledge of job conditions is essential to determine such prescriptions.

—From Thirtieth Annual Report of the National Society for the Prevention of Blindness, 1944.

Physical Therapy

THE Kaiser Company, which employs 12 graduate physical therapists in its Peramente Foundation Hospitals in Oakland and Richmond, California, reports that nearly 11,000 physical therapy treatments a month are given its shipyard workers. DR. SIDNEYY R. GARFIELD, medical director of the Kaiser West Coast Industries, says: "Our trained workers in this field have been an important factor in getting injured employees back on the job promptly. From our experience, physical therapy is becoming more and more an important adjunct to the services of the hospital in its efforts to reconstruct human life." CHARLES W. WILSON, president of General Motors, reports that all medical departments of that corporation are supplied with a variety of physical therapy equipment. Plant physicians, however, have found "difficulty in obtaining trained physical therapists," but the prospects for career service in this branch of medicine are good. Caterpillar Tractor Company, Peoria, Illinois, had a well-established physical therapy department for several years before the war. The department proved its value during the stress of war production, according to RALPH M. MONK, director of industrial relations. Caterpillar employees received infra-red and ultra-violet rays, diathermy, fomentations and other forms of hydrotherapy as a regular part of the company's medical serv-

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Brougher, John C.: W... 52:520-521 (Dec.) 19...

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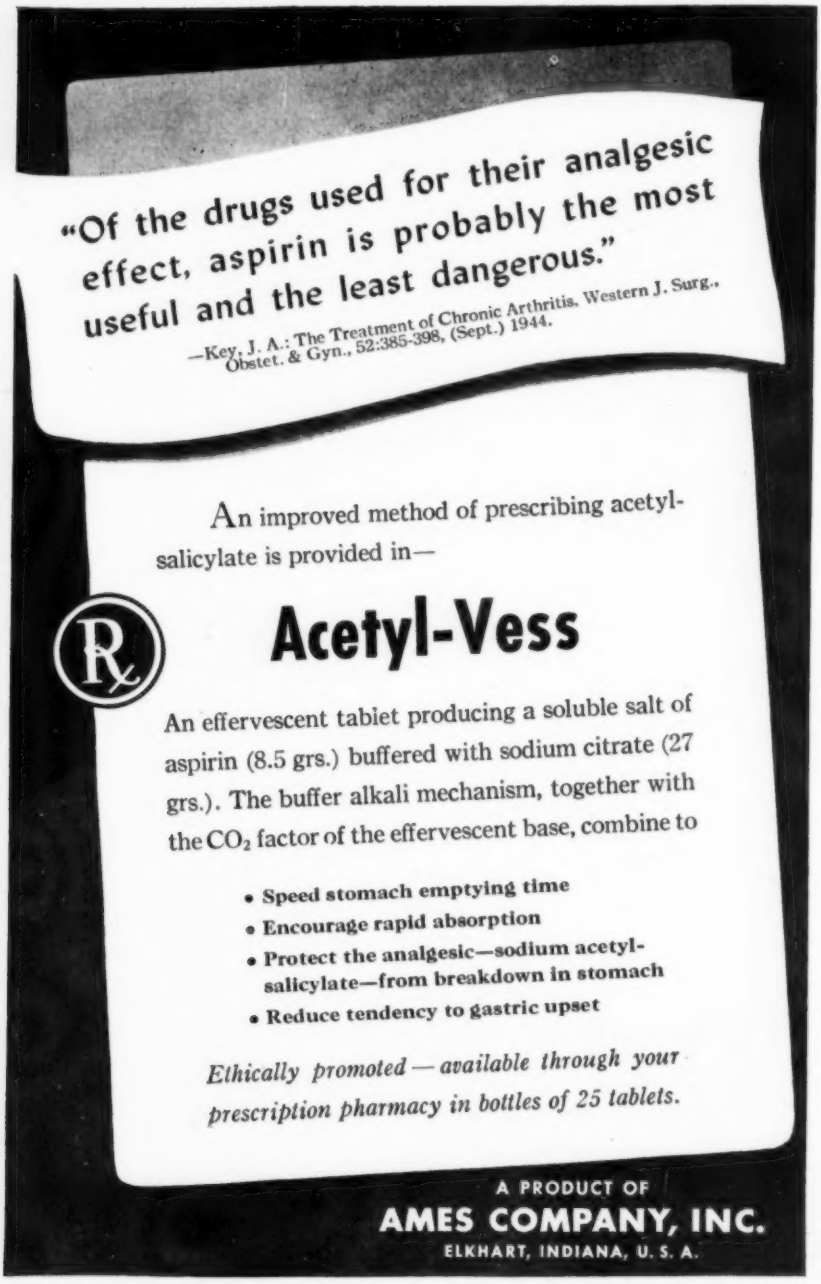
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—Key, J. A.: The Treatment of Chronic Arthritis. Western J. Surg., Obstet. & Gyn., 52:385-398, (Sept.) 1944.
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ices. During 1944, first aid visits to the clinic rose to 189,187, with physical therapy used wherever needed. "Our experiences over the years has demonstrated the usefulness of physical therapy in the field of industrial medicine. Not only does the program actually hasten the recovery of injured employees, thereby reducing lost time and specific loss cases, but it likewise provides a great amount of psychological benefit, since the patient appreciates the treatment and attention. It is our belief that this field of physical therapy is coming into its own in progressive industrial medicine programs. It should offer real opportunities for men and women who are interested in this type of work. To our knowledge, there are too few people who are qualified to render effective service in this important field." The men who build torpedo boats, landing craft and other victory implements for the Higgins Industries, Inc., of New Orleans, also have the advantage of well-developed physical therapy clinics. ANDREW J. HIGGINS, whose sister (Mrs. Anna Higgins Matthiesen of New York City) developed the first physical therapy department 30 years ago in Bellevue Hospital, was among the first industrialists to make use of physical therapy. "Physical therapy treatments have been found of great benefit in our industrial clinics." Atlantic Refining Company, of Philadelphia, reports that while it has few accidents it has found physical therapy of "considerable value." "In addition," says DR. S. C. LONG, medical director, "we utilize physical therapy in its various forms to rehabilitate our employees whenever necessary." International Harvester Company, of Chicago, reports that in accident cases among its employees physical therapy treatments begin while they are in the hospital. FOWLER MCCORMICK, president, states: "We have found through the years that physical therapy is invaluable in the after-care of many of our accident cases." The use of physical therapy by Pan American Airways System is reported by ROSS A. MCFARLAND, medical coordinator. "Since 1936 our company has maintained a medical department serving the various flight and ground crews in this country and in other parts of the world where we have operated. In various divisions we have benefited from the assistance of trained physical therapists both in our clinics in the shops and for members of the flight crews when their illness indicated that physical therapy would be beneficial." The system employs a large number of persons who had infantile paralysis and have made sufficient recovery to be on active duty. Physical therapy played a part in their rehabilitation.

—National Foundation for Infantile Paralysis, release of June 25, 1945.

Whisk!

ONE of the many ingenious aspects of the Public Health Service's V-D campaign in Birmingham is this: the sponsors have a tie-up with the local taxi company so that people who flunk their Wassermann tests at the examination station will be immediately whisked by taxi, free, to a hospital for the treatment.

—*Tide Newsletter*, May 25, 1945.

Industrial Hygiene Bibliography

THE U. S. Public Health Service has recently brought off the press *Public Health Bulletin* No. 289, "Bibliography of Industrial Hygiene" to cover the years 1900-1943. The brochure is a selected list compiled by representatives of the Industrial Hygiene Division of the Bureau of State Services. Copies may be obtained at 25 cents per copy, from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

—*California & Western Med.*, May, 1945.

In Maine

OWING to existing travel conditions and to mileage involved between its members, the committee on Industrial Health has felt it inadvisable to hold a meeting. However, a general survey of industrial plants indicates conditions well stabilized and there appears to be no shortage of medical or nursing personnel. Your committee hopes to meet with the State Industrial Committee in September, when men doing industrial work may meet the said State Committee, and it is hoped that at this joint meeting we may be advised of problems confronted by industry and also hear from men doing special work in this field.—H. W. STANWOOD, Chairman, Committee on Industrial Health.

—*J. Maine M. A.*, June, 1945.

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—Mayer, Jr., S.: Clinical Use of the Sulfonamides, Western J. of S. O. & G., 52:213-217 (May) 1944.

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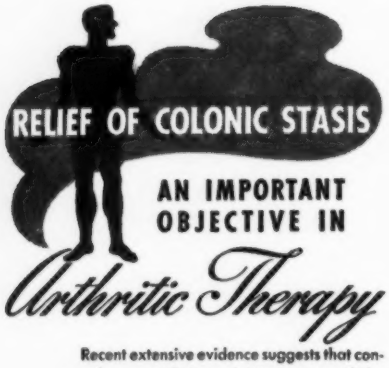

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COMMENT and OPINION

EVERY state should provide industrial hygiene service, and within states each major industrial area should have a regional industrial hygiene unit, instead of relying, as at present, on industrial hygiene programs that operate for the most part on Federal funds and with inadequate staff.

—*Trenton, Tennessee, Gazette*, quoting SURGEON GENERAL THOMAS PARRAN.

4-F's

IN HIS report, "State of the Nation's Health," Dr. Logan Clendening compiled this list of some of history's greatest military and naval figures—all of whom would have been rejected as 4-F's under our present Selective Service standards: George Washington would have been rejected for having false teeth; Bismarck for being overweight; Napoleon for stomach ulcers; General U. S. Grant for alcoholism; Caesar for epilepsy; the Duke of Wellington for being underweight; Genghis Khan for paranoia; Kaiser Wilhelm for having a withered arm; and Lord Nelson for having only one arm and one eye.

—*Personnel Administration*, April, 1945.

Rhode Island Red

DRASTIC revision of Rhode Island's compulsory disability insurance program was called for last month by its administrative agency, the state unemployment compensation board. In a report to Governor J. Howard McGrath and the general assembly, the board said that while benefits totaling $5,034,000 had been paid out in 1944, income via payroll deductions amounted to only $4,610,000. The board confirmed earlier reports that some employees had received a greater income while ill than while working. In fact, the board said, it was possible under the law for a claimant to receive as much as $729 in benefits during one maternity. It recommended that the benefit schedule be revised and that maximum limits be established. "Up to now," commented the *Christian Science Monitor*, "experience with this American experiment hardly entitles it to be held up as a model for widespread adoption. When the state pays wage earners for being sick, it runs into some of the frailties of human nature. Many more workers in Rhode Island have put in claims for payment than were found to be justified by medical examination. More checks have been issued during the past two Junes than in any other months, numerous employees apparently finding it handy to draw insurance money with the opening of the vacation season."

—*Medical Economics*, May, 1945.

Hospital Contracts

RECENTLY it has come to our attention that there is at least one instance in Alaska where a hospital has been contracting with an industrial concern to supply both hospital and medical care for their accident cases. We do not feel that this is a fair type of practice and it is not considered to be ethical by the medical profession. Realizing that the hospitals in Alaska have had financial difficulties at times, the doctors have been hesitant in the above case in charging the hospital for their services. This has resulted in a direct contribution of money to the hospital, but this is not the right way for contributions to be made. We feel that no hospital should participate in such a contract. We would like to know if there are any other instances of such contracts in the Territory. If any doctors know of hospitals carrying similar contracts, the Secretary of the Association would like to receive letters about the same or letters of comment in general about this practice.

—Alaska Territorial Medical Association, in *Northwest Medicine*, June, 1945.

Nation's Health

A SURVEY of the nation's health picture disclosed the following favorable facts: The estimated national rate of deaths from all causes in 1944 was 10.6 per 1,000 population as compared with 10.9 in 1943. Infant mortality also continued downward, at 39.2 per 1,000 live births, compared with 40.1 in 1943. Stillbirths dropped a few points too. Life expectancy of infants is now about 65 years. The campaign

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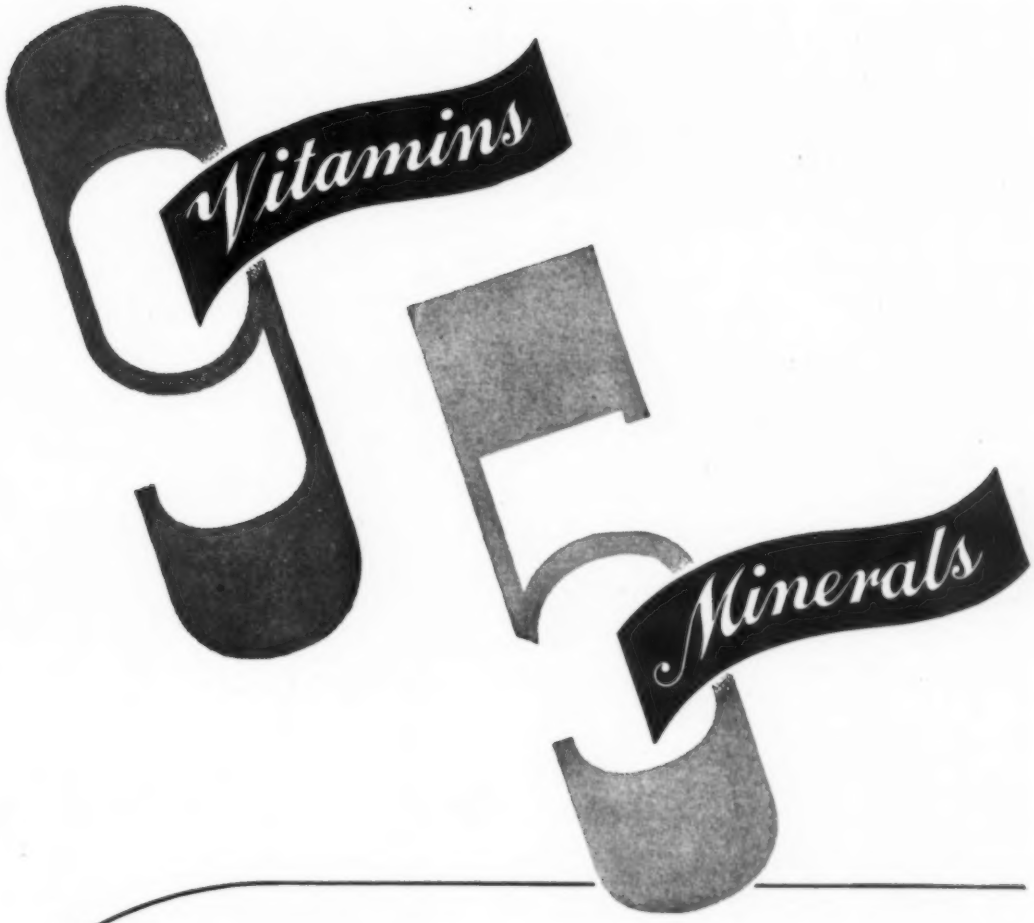

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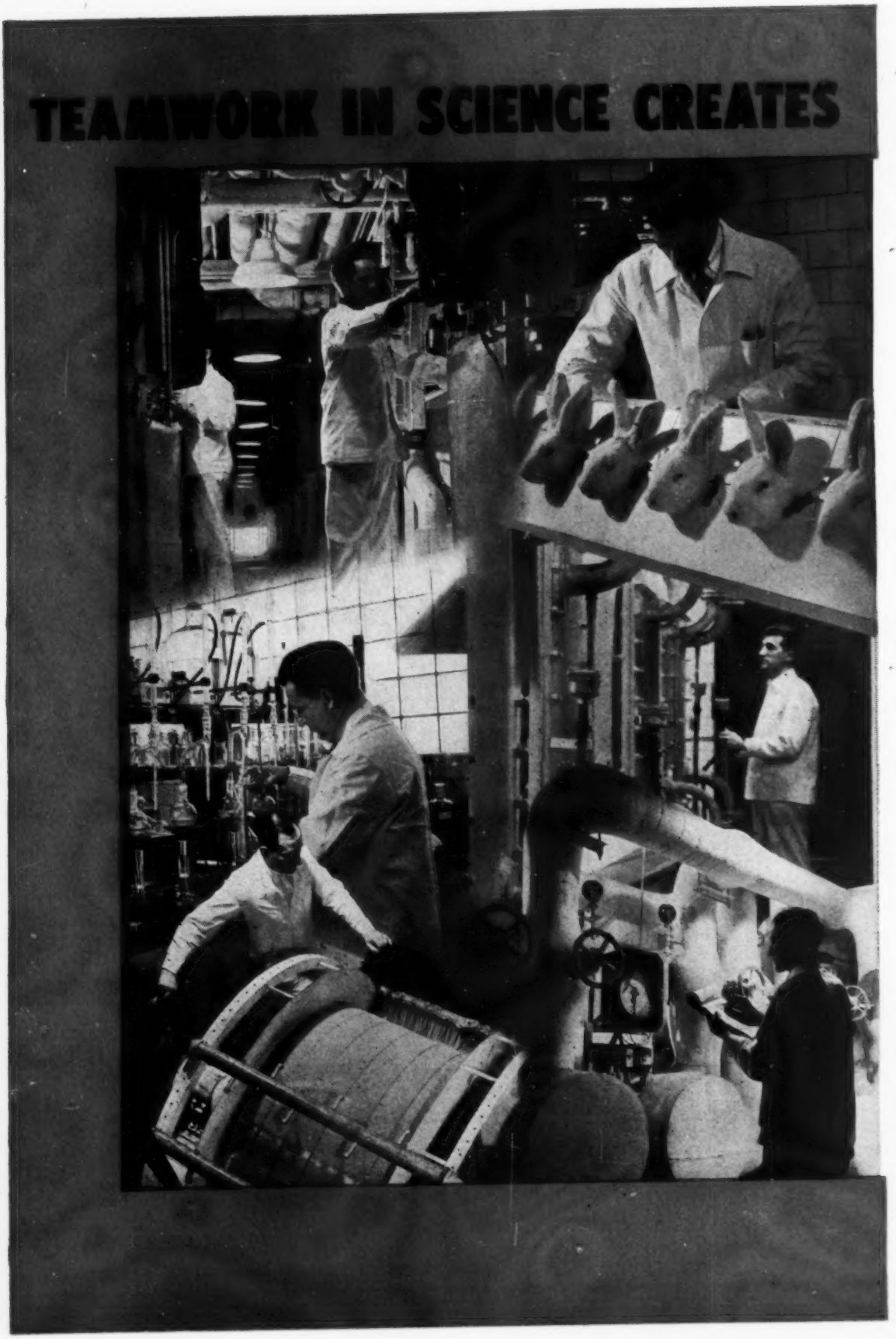
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We take pride in the new $3,000,000 Cheplin Penicillin laboratories, but we take even greater pride in our staff of scientists who manage and operate them.

Less than two years ago there was a cornfield where these laboratories now stand. A group of hand-picked scientists composed of bacteriologists, pharmacologists, medical men, toxicologists, chemists and chemical engineers, working as a team have created Cheplin Penicillin.

To our staff goes full credit for making Cheplin one of the largest producers of penicillin in the world. When you need penicillin — specify Cheplin, the achievement of teamwork in science.

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LABORATORIES INC.
SYRACUSE 1, NEW YORK

FOR SPEED... LOW COST... RESULTS

IN BLOOD SAMPLING!

The B-D VACUTAINER

A vacuum tube device to draw blood samples for serology and chemistry.

● To use the Vacutainer, one end of the double-pointed needle, or regular luer needle and adapter is inserted in the vein, the rubber cap punctured by the other point, and blood is drawn by vacuum into the glass Vacutainer tube. The plastic holder for needle and tube provides guidance and ease in handling. The sealed tube with its sample inside, protected from possible contamination or spillage, is ready for the laboratory.

In developing the Vacutainer we have attempted to combine the efficient features of blood collection methods already in use and to eliminate their objectionable features. The B-D Vacutainer offers these advantages:

● ***SPEED*** — Less than 1 second per 1 cc. of blood — under normal conditions.

● ***LOW COST PER BLOOD*** — Original cost of equipment compares favorably with any other method. B-D Vacutainer saves cost of syringe, tube, cork, washing, scouring, sterilization, and other preparations for use. Less handling means less danger of breakage. Speed of Vacutainer may permit one technician to do the work of two using other methods.

● ***CONSISTENTLY HIGH QUALITY OF BLOOD DELIVERED*** — Delivers the quality and quantity of blood to the laboratories that they have always wanted but have not always received.

● ***ADAPTABILITY*** — B-D Vacutainer tubes are available in a variety of sizes to fit most standard tests. They are supplied with or without anticoagulant.

● ***CLEANLINESS*** — The closed container eliminates contamination and also possibility of spillage.

B-D PRODUCTS

Made for the Profession

BECTON, DICKINSON & CO., RUTHERFORD, N. J.

against venereal disease has become increasingly effective. During the last 18 months, penicillin has cured 96% of the gonorrhea cases in which it was used. Some cases of infectious syphilis yielded to penicillin also. Fear that returning veterans from the Pacific islands would bring back new diseases has largely been dispelled. Such ailments as filariasis constitute no real threat to civilian health, army and navy doctors declare. On the debit side of the nation's health balance sheet are these facts: First, an increasingly serious shortage of doctors, dentists, psychiatrists and nurses. This situation will probably not be relieved until both Germany and Japan have been defeated. Lack of psychiatrists is especially serious, in view of the number of veterans who will be suffering from the shock of war experiences in the years to come. Many civilians too have become at least temporarily deranged by strain and worry. It has long been known that approximately two-thirds of the illness encountered in general medical practice is essentially neuropsychiatric in origin, and that half of the patients in hospitals at any one time are there because of serious mental disorders. Indeed, it may be safely predicted that in any group of 15-year-olds, one out of every 22 will some day be committed to a mental institution. Poliomyelitis (infantile paralysis) and meningococcus meningitis (cerebro-spinal) fever reached epidemic proportions in the United States during 1944. The poliomyelitis epidemic in 1944 was the largest in the United States since 1916. There was a total of 19,268 reported cases. A total of 16,059 cases of meningococcus meningitis occurred in 1944, as compared with 19,974 cases in 1943, which was the highest recorded figure. Reports from a group of selected industries indicate increased absences of workers due to sickness. Respiratory diseases accounted for most of the absenteeism. The male frequency rate of illness (138.1 per 1,000 workers for 1943) was the highest recorded annual rate for the last 10 years. The female rate of illness (204.1 per 1,00) was likewise the highest recorded rate since 1934.

—*Trenton, Tennessee, Gazette*, May 17, 1945.

Historical

REFERENCES to the apothecary go back to the dawn of recorded history. The earliest recorded prescription dates from 3700 B. C. Directions for the preparation of prescriptions have been found on an Egyptian papyrus of about 3300 B. C. In another papyrus 18 centuries later mention is made of ointments, mineral and vegetable drugs. Among such unappetizing items in ancient medicine chests as swine's teeth, putrid meat, lizard's blood, etc., are opium, cassia, aloe, colchicum, henbane—in fact 18 of the 700 drugs described at that time are listed in the U. S. Pharmacopoeia of today. In these early days pharmacy was a branch of medicine. In 1224 A. D., however, pharmacy was separated from medicine by official decree and was established as a separate profession. The first organized body of pharmacists originated in 1297, possessing a constitution and by-laws, and an official seal.

—From an address by GEORGE F. REDDISH, Chief Bacteriologist, Lambert Pharmacal Co., and Ph.D. Professor of Bacteriology, St. Louis College of Pharmacy, before the graduating class of that college; in a Release of the Office of Pharmacal Information.

"Label" Thinking

WHERE is label thinking leading us if we accept as fact an irreconcilable conflict between management and labor? How can we draw a sharp line between labor and management even in the case of a single organization or single shop when today we are faced with such questions as unions of foremen and the status of minor supervisory employees? Where does "labor" end and "management" begin? One of the outstanding characteristics of American industry is the constant flow of personnel from shop bench to the manager's office. There is a saying in Standard Oil Company (New Jersey), for example, that "whenever a president of Jersey Standard dies or resigns, a new office boy is hired." The directors of Standard are workingmen, and they came up through the ranks. The 11 of them who sit every day around the table in the board room have been in the company's service an average of nearly 27 years; but as directors they have served an average of only six years. Ralph W. Gallagher, chairman of the board,

Eyes

SAVE MANPOWER... MATERIALS... MONEY

Are you shouldering your share of the nation's $50,000,000.00 annual bill for eye injuries?

You shouldn't be . . . because in most cases there's no need for it. Most eye accidents can be prevented by the use of the proper safety eyewear.

Employees with safety eyewear carefully fitted to their facial requirements . . . eyewear matched to the needs of the job . . . are better workers. They are more productive, because they are unhampered by the spectre of perpetual darkness. There is markedly less lost time, due not only to major eye accidents but to minor, unreported cases of irritation from foreign bodies.

It's all these things, added together, that make safety goggles a profitable investment for you and your workers, too. Bausch & Lomb Optical Co., 602 St. Paul St., Rochester 2, N. Y.

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Safety Eyewear

HYDROSULPHOSOL

Provides all 9 desired requisites as a superior therapy in thermal, acid and caustic burns.

Provides for mechanical exclusion of air at site of burn • Insures prompt relief of pain • Aids in abating burn shock • Bacteriostatic influence • Non-toxic effect • STIMULATES TISSUE REPAIR • Rapidly reduces inflammation and edema • Results in absence or marked reduction of scar tissue • Tends to shorten convalescent period.

HYDROSULPHOSOL is a true solution of sulfur bearing compounds resulting solely from the reduction of flowers of sulfur by a catalytic process. In aqueous solution, it is capable of rapidly releasing its high concentration of sulfhydryl ion (-SH radical) in such form as can be effectively utilized by the body in the synthesis of sulfur-containing amino acids . . . functionally active in cell stimulation and directly related to tissue respiration and repair.

Unlike the sulfa group and many other sulfur compounds, Hydrosulphosol is non-toxic when administered orally or topically applied in heavy concentrations, and will not result in damage to liver and kidney function.

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AVAILABLE FORMS
AQUEOUS SOLUTION:
Bottles of 8 fluid ounces.
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started his career more than 45 years ago as an oiler in the pumping station of a pipe-line system in Olean, New York. Eugene Holman, the president, started with the company 24 years ago as a field geologist. Orville Harden, a vice-president, started in his teens as an office boy. T. C. McCobb, who recently retired as comptroller, came to Standard in 1913 as a clerk in the Baltimore office. It would be hard indeed to select any point in the careers of these men and say, "Here you ceased being 'labor'—now you are 'management' or a 'capitalist'." To be sure their functions changed. With the passing of years they worked less with their hands and more with their minds, but throughout the whole continuous process, their objectives remained the same. If division occurs between management and labor, both sides will be to blame. Some businessmen speak of labor as they would of a gang of saboteurs loose in their plant. And some labor leaders speak of management as though its sole purpose in life was the subjugation of workers. The basic aims of both labor and management are, of course, the same. They are both striving to increase production, to improve living standards, to produce more for the benefit of everyone. They need each other. If they fail to cooperate, the enterprise that supports them both will fail and both will be looking for jobs. Again, it is not labor versus management, but labor and management.

—From "United We Stand," by R. T. HASLAM, Director, Standard Oil Company (N. J.).

Government Medicine

SOME of those who have been such strong proponents of governmental medical and health programs have found the criticism which has been leveled at the Veterans Administration because of existing conditions in some of the administration's hospitals a bitter pill to swallow. If the charges which have been made are true, the medical programs in some of the Veterans Administration facilities have many, if not all, of the defects which the medical profession has warned are inevitable in government administered medical care programs. Albert Deutsch, writer for *P. M.*, who has been a rabid advocate of federalized medicine and a bitter critic of organized medicine, recently said: "If this is an example of so-called Federal medicine, I want none of it." Proponents of compulsory governmental medical programs also received a shock in California and Michigan where the legislatures refused to enact such measures. Those who contend that the public wants regimented medical services haven't the proof for their conclusions. Nevertheless, the public is interested —very much so—in programs which will spread the risk and distribute the costs of medical care on a prepayment basis. The ultimate conclusion would appear to be that it wants the job handled through voluntary, unofficial programs under the direct guidance of the medical profession. The present attitude of the public is that it is willing to give the profession reasonable time to do the job but that it expects an early end to bickering and delay. In our opinion, the profession had better accept this challenge—and in a hurry.

—Comment in *Ohio State M. J.*, June, 1945.

Personal Health Service

PERSONAL Health Service.—This is the New Dealers' new term for state or political medicine. You will hear a lot about this in the future. Remember it well! Stop to think what it means! Whether you want to or not, your attention will be drawn to it as time goes by. It is the term used in the new Wagner-Murray-Ding Dong Dell Bill covering its medical aspect. The panacea for all the people's ills! The ultimate in medical care! Utopia! Oh yeah? Pure and simple regimentation of 110,000,000 people. Do you realize that we as physicians are the only profession not yet regimented? Not socialized or communized by guilds? Still free as to the conduct of our profession? Yes, this is true! Up to now we have been successful in thwarting the attempts to break down the practice of medicine. We are the last bulwark against regimentation and collectivism. This new order is not meant for us alone but for everyone in the country. As we are still holding strongly, there is a chance to defeat this wave of centralization. Should we fall, then the democracy we know will have been lost. The government will rule the peoples rather than the democratic way of the peoples ruling the government. Is democracy worth

more effective

ANTIBACTERIAL, ANALGESIC CHEMOTHERAPY *for Acute and Chronic* BACTERIAL EAR INFECTIONS

White's OTOMIDE

A new, more effective method of topical chemotherapy, for prevention and treatment of common bacterial infections—*BOTH acute and chronic*—of the middle ear and external auditory canal.

FORMULA:

Carbamide (Urea)	**10%**
Sulfanilamide	**5%**
Chlorobutanol	**3%**
Glycerin	**q.s.**

White's Otomide is a stable solution of urea (carbamide) and sulfanilamide in glycerin. The glycerin employed in this product has been especially processed to assure high specific gravity. Chlorobutanol, a recognized local anesthetic agent *that is therapeutically compatible with sulfonamides* is included in the formula for its analgesic and antipruritic properties.

Combining the essential requisites of a most serviceable type of "ear drop" medication, Otomide provides:

1. **Effective bacteriostasis, even in the presence of pus;**
2. **Gratifying local analgesia;**
3. **Prompt remission of foul odor and cessation of discharge in purulent otorrhea.**

Detailed literature available to physicians on request.

White's OTOMIDE is available in dropper bottles of one-half fluid ounce (15cc.)—on prescription only.

WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 2, New Jersey.

PEDICULOSIS

must be relieved *Quickly* among

WAR WORKERS

Early discovery, and immediate and effective control, are important in the treatment of Pediculosis among war production workers. Unless proper steps are taken, a single case of Pediculosis may lead to infestation of other employees.

Cuprex is a valuable aid to the industrial physician who bears the responsibility of having to discover and check any condition which may impair the efficiency of the workers under his care.

Cuprex therapy is simple. One treatment—of from 15 to 30 minutes—destroys the nits as well as the lice. Cuprex requires no messy or repeated applications, and the patient may return to his job without delay, and without embarrassment.

Literature on request

MERCK & CO., Inc. *Manufacturing Chemists* RAHWAY, N.J.

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The Personal Insecticide

Available in 2 oz. and 4 oz. bottles

fighting for? We say it is. Where has medical care progressed so greatly as in America? Where does European medicine now stand with its guilds, panels, and state medicine? Will we still go to Europe for advanced training in our specialties? Not any more. Years ago we would have welcomed this opportunity but medicine has retrograded so far that there is no comparison between American and European medicine. Why? The answer is all the evils of regulated medical practice. The "planners," and there are too many of them, go to the greatest of extremes to put over their "social uplifts." Why did the proponent newspapers editorialize favorably on this bill even before it was published? They had the contents 48 hours before the bill was even printed by the government. Why again? The answer is obvious. To defeat this obnoxious and dangerous legislation, contact your two senators and your representatives in Congress immediately. Request a copy of Senate Bill 1050 and House Res. 3293. Study it, learn it, and then preach it to your patients and friends.

—Editorial in *Weekly Bulletin* of the St. Louis Medical Society, June 15, 1945.

Epileptics

EMPLOYERS often discharge an epileptic, or refuse to hire a person who has had seizures. Yet there is no evidence that epileptic workers cause a high accident rate. In this connection, the American Epilepsy League recently studied a group of about a hundred adults subject to seizures. They had not been self-supporting; they had gone to the League for help in finding jobs. Of these, 80% were found to be employable; they secured jobs and stuck to them. Only 2% of the employed persons had any seizures which interfered with their working. And no accident was caused by a seizure. Only one person had any kind of accident, and it was caused by carelessness, with a resultant loss of a solitary fingernail!

—From "New Hope for Epileptics," by HERBERT YAHRAES, in *The American Mercury*, July, 1945.

Vitamins and Health

TO THE great volume of material on vitamins' effect on man's vim, vigor and vitality, a new chapter was appended last fortnight. The study was one of the more extensive and scientific jobs so far undertaken. The test itself lasted a year and the scientists involved took two more years preparing their report. The California Institute of Technology and the National Research Council jointly underwrote the study, and DR. HENRY BORSOOK conducted it, Its locale was the Lockheed Aircraft plant at Burbank, and the sample consisted of 528 male workers who volunteered; most of them came from the swing shift and they represented every major department in the plant. All the respondents (70% of whom were below 30 years of age) received a thorough physical exam before the study actually started, in March, 1942. Then the group was divided into two parts: one section (the control group) received a daily dose of fake pills, while the other section received a combination vitamin-mineral pill containing Vitamins A, B^1, B^2, C and D, plus niacinamide and calcium. During the first six months, there was no significant, statistical difference between the vitamin or the control group, although the working efficiency of both was somewhat higher than a third group receiving no pills at all. The second six months ran through fall and winter; and while there was the usual seasonal increase in absenteeism, it was much less noticeable among the vitamin group. Over the whole period, the performance of the vitamin group was far superior. It had, the scientists reported, a production advantage increase over the control group equal to 10.5 working days per man per year—a manpower gain of 4.1%. Of this total gain the researchers attributed 62.9% to a general better work performance, 21.6% to reduced absenteeism and 15.5% to reduced turnover. The percentage reduction in absenteeism as compared with that in the control group was 18.6%, in turnover 26.9%,

EMPHATICALLY *Yes*

LABORATORY and clinical tests under competent direction have shown TAMPAX to possess a wide margin of safety in providing for intravaginal absorption of the flux. With the average monthly loss approximating a total of 50 cc., even *Junior* TAMPAX, with its absorptive capacity of *20 cc. per tampon*, assures adequate protection for many women during the entire period. *Regular* TAMPAX has a capacity of *30 cc.*, and *Super* TAMPAX will easily absorb *45 cc.*, per tampon.

One investigator,[1] employing TAMPAX for catamenial protection in "twenty-five women under close institutional observation" concluded that "with a tampon of proper size, absolute comfort and complete control of the flow can be obtained . . . the obvious advantage of the small, medium and large sized tampon of the particular brand (Tampax) is to be noted." Other clinical studies[2,3] have demonstrated that in well over 90% of the subjects, TAMPAX affords complete protection with satisfaction, throughout menstruation.

The coupon below is for your convenience.

TAMPAX ACCEPTED FOR ADVERTISING BY THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

REFERENCES: 1. Med. Rec., 155:316, 1942. 2. West. J. Surg., Obst. & Gynec., 51:150, 1943. 3. Clin. Med. & Surg., 46:327, 1939.

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PALMER, MASSACHUSETTS

☐ Please send me a professional supply of the three absorbencies of Tampax.

☐ Also literature.

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"Total" Therapy

FOR INDUSTRIAL DERMATITIS

"The therapy of a majority of the cases of contact dermatitis encountered in industry", according to the noted dermatologist, Dr. Frank C. Combes[1], "requires no further medication than the intelligent use of a *good buffer solution such as Liquor Aluminum Acetate (Burow's solution)* . . . and a *good crude coal-tar paste.*"

His preference for wet dressings solution is **Domeboro Tabs** ("widely used in industry", particularly by Parkes[2] at Curtiss Wright for cutting-oil dermatitis)—because it is "a convenient tablet which, when dissolved in water, releases a *lead-free aluminum acetate in appropriate dilution,*" with a substantial percentage of boric acid.

The *crude coal-tar paste* used at New York University, according to Combes, "is manufactured commercially under the name **Daxalan**"—which has been found *superior to distillates, filtrates and pastes containing liquor picis carbonis.*

It must be properly applied for "optimum benefit", and Combes advises thinning with **Domolene** for spreading over a large area —because in his judgment its hydrophilic ointment base "does not materially lessen the therapeutic efficacy of the paste."

With tissue repair under way, and only erythema remaining, the use of **Domeboro Ointment** (each ounce of which, in a special hydrophilic base, possesses the therapeutic action of one Domeboro Tab diluted in a pint of water), permits a quicker return to work, while healing is promoted by its efficient topical action.

(1) Combes, F. C.: Indus. Med., July, 1944.
(2) Parkes, Morey: Indus. Med., January, 1944.

Samples and full details gladly sent on request

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and improvement in general work performance 2.6%. Although the last figure is the smallest, the actual gain from improved work performance is greatest as all workers are affected, whereas in the case of absenteeism and turnover only a fraction of the total number of workers is affected. Definite evidence of a psychological effect was one of the interesting findings of the study. Even those getting the fake pills seemed to benefit. The psychological effect influenced only absenteeism (about 29.3%); general work performance and the rate of turnover were not affected by it. The consistency of the trend toward superior performance as the study year progressed is the most persuasive feature of the evidence for crediting benefit to the therapeutic effect of the "vitamin supplement." This consistency appeared in all the reasons given for absence, through data on turnover, etc. Although the psychological effect evidenced itself early in the study, it diminished gradually as the year progressed. The physiological effect, on the other hand, built up slowly but was not manifest until four to six months, from which time it persisted. As the subjects were a superior group of relatively young workers and their case histories showed no previous evidence of severe nutritional diseases, no dramatic improvement in their health resulted from their use of vitamins, but none had been expected.

—*Tide*, June 1, 1945.

Need for Improvement

IT IS regrettable that domiciliary care and pensions are the predominant methods by which we attempt to meet our obligation to the sick veteran. Although there are numerous agencies to help process veterans so that they may obtain jobs, education, loans, homes, businesses, etc. it is apparent that we have no concerted well developed therapeutic program for genuine psychiatric treatment. We know that to keep men in the stauts of hospitalization calcifies symptoms. Pensions are doubly pernicious since they tangibly reward the patient for being ill. We should vigorously oppose policies which make invalids of potentially useful citizens thereby denying them the status of independent productive manhood. The War Department obviously is only obligated to fulfill its mission of fighting the war successfully. It is our province to decide whether we are satisfied with meager but expensive pensioning or whether we are genuinely interested in rehabilitating veterans into autonomous citizens. It is a legitimate economic and social question to ask whether even a large democracy like ours can afford millions of pensioners. It is obvious that we cannot successfully buy them off in money and privilege since the neurotic appetite is insatiable. Nor can they be treated with indifference and neglect for the same reason. Much the better solution would seem to be the institution of adequate treatment so that there will be no rebellion or complaint because the ex-soldier will be re-established in a successful civilian life. We owe ourselves and the future of our country the duty of maintaining in health the majority of our citizens through amelioration of distress everywhere and thereby reducing the bulk of the malcontents.

—From "Need for Improvement in Medical and Psychiatric Concepts," by FRANKLIN G. EBAUGH, M.D., in *Rocky Mountain M. J.*, May, 1945.

The Personnel Department

PROFESSIONAL personnel workers are employed in business and industry, in government, and in schools and colleges. In industry and government they are generally concerned with the staffing of operating departments and agencies with competent, trained personnel, and are thus responsible for the development and fulfillment of policies affecting recruitment, evaluation, selection, placement, training, transfer, discipline, job standardization and classification, rate setting, wage payment plans, counseling, grievances, health and safety, morale, labor relations, compliance with Federal and state laws, separations, etc. In addition, they may be responsible for public relations by obtaining the understanding and support of the personnel program from management, employees, the legislative bodies, the press and the public. . . . *Health and Safety.*—The concern of personnel workers is with the working environment and the maintenance of adequate standards of health and safety of employees. Certain elements which are usually the province of the

Surgitube

An amazing new gauze bandage

A quicker, easier way

1. Pull one end of Surgitube over extremity and twist bandage a half turn, then

2. open free end of bandage and

3. double back over first part, then

4. bring ends of bandage together and apply adhesive tape to hold in place.

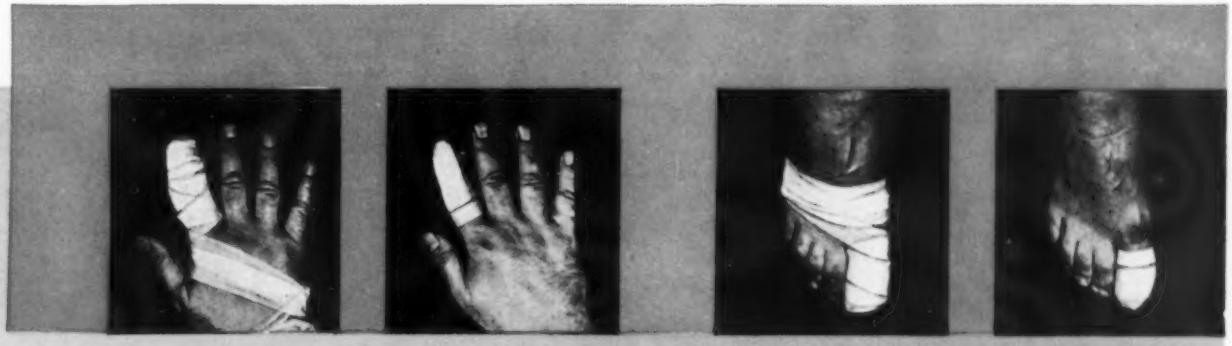
Surgitube is the new seamless, tubular, gauze fabric bandage, applied with amazing economy of both time and material and neatly hugging contours of all extremities without binding and without bulk. It is available in five sizes to assure perfect conformity in dressings for fingers, toes, hands, feet, arms, legs, breasts, and head.

A patented technique gives Surgitube the high degree of elasticity and adaptability that make both application and removal quick and easy, without any special training.

In most cases, Surgitube not only makes a more suitable bandage, but saves from 30% to 500% in fabric consumption as compared with ordinary gauze bandage! It has been used with completely satisfactory results for more than four years in civil, industrial, and government hospitals; by surgeons, physicians, podiatrists, chiropodists, and nurses.

Surgitube

to bandage extremities!



GREATER COMFORT, FREER ACTION, BETTER APPEARANCE for the patient, now that Surgitube is here to take the place of awkward, bulky bandages for fingers and toes. The danger of complications from friction, binding, and slipping is eliminated with the use of streamlined, perfectly anchored Surgitube bandages. For example, the average gauze bandage (1-inch) required for finger and toe dressings is 72 inches; Surgitube, either No. 1 or No. 2 size required—*only 8 inches.* The resulting compactness of Surgitube bandages permits foot and toe dressings without the need of cutting shoes; also hand, arm and leg dressings which permit use of customary clothing. Also economical beyond belief.

Manufactured only by

SURGITUBE PRODUCTS CORPORATION

Bronx 61, New York

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Canadian Distributor: **ROUGIER FRERES**

350 Le Moyne Street — Montreal, Canada

"A twist and it fits"

The ideal bandage for treatment of epidermophytosis—*36 inches of Surgitube No. 4, compared with 200 inches of flat bandage.* Neat, compact, medication-retaining protection easily and quickly applied and economical enough to dispose of at will.

STOCKINGS, sizeless and fitting any foot, are quickly made with No. 3 Surgitube. Conform perfectly without binding. Surgitube foot coverings are cheap enough to discard when soiled, although they may be boiled and reused.

Perfect Fitting Head Bandage quickly applied with No. 5 Surgitube. Snug-fitting, perfectly conforming protection completed in seconds, remains fixed and secure. Economical enough for quick discard. Useful for surgeons and assistants in operating rooms.

Over-dressing for forearm can be readily applied and removed without pain — with Surgitube No. 3 or No. 4. This all-purpose bandage or over-dressing is especially useful in the treatment of burns, lacerations, and skin infections.

The neat, well-fitting leg-dressing illustrated, used about 108 inches of Surgitube No. 3. Flat bandage would require a minimum of 400 inches. Surgitube makes economical, form-fitting covering for lower extremities for orthopedic strappings, plaster casts, and wet dressing retainers.

SOME COMPARISONS
Showing Material Saving through Use of SURGITUBE

Ordinary Bandage	Yards Required	Surgitube Seamless Tubular Bandage
Upper Extremity	*Gauze*	
Finger	2 yds. plus 1 in.	8 inches
Hand	4 yds. plus 1 in.	19 inches
Forearm	5 yds. plus 2 in.	1 yard
Entire Arm	10 yds. plus 2 in.	2 yards
Lower Extremity		
Toe	2 yds. plus 1 in.	6 inches
Forefoot	11 yds. plus 1 in.	14 inches
Ankle	8 yds. plus 2 in.	1 yard
To Knee	11 yds. plus 3 in.	3 yards
To Hip	20 yds. plus 3 in.	6 yards

Surgitube is supplied in 50 yard rolls packed in dispensing boxes, in five sizes of white and two sizes flesh tint.

No. 1—Regular dressing for slender fingers and toes. White or Flesh, 50 yard Roll $2.50

No. 2—Regular dressing for large fingers, thumbs, toes; also as an over-dressing after application of medication. White only, 50 yard Roll $2.50

No. 3—Regular dressing for hands, feet, forearm, lower leg. White or Flesh, 50 yard Roll $2.50

No. 4—Especially for dermatological dressing. White only, 50 yard Roll $2.50

No. 5—Especially for head and scalp dressing, also for complete leg dressing to hip. White only, 50 yard Roll $4.00

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Bronx 61, New York

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Note: The patented **SURGITUBE** tubular fabric bandage, manufactured exclusively and distributed nationally by **SURGITUBE PRODUCTS CORPORATION**, also is being supplied to the Wm. Scholl Manufacturing Co. of Chicago, for distribution under their trade name, "Half-Twist," and labeled "made under Surgitube Patent No. 2326997."

pH6 CLEANS GRIMIEST HANDS...YET IS GENTLE ENOUGH FOR WOMEN'S FACES

STEPAN
TRADE MARK REG. U. S. PAT. OFF.
pH6
skin cleanser
SULPHONATED OIL ...NON-LATHERING

For **FREE SAMPLES** and complete technical data write to

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How do your workers wash their faces? Many of them, especially women unwilling to use "industrial" soaps on their faces, bring cakes of "complexion soap" from home. These toilet soaps are not intended to remove industrial grime and furthermore give an untidy appearance to the wash-room.

pH6 FOR HANDS AND FACE

The flexible STEPAN-pH6 method solves this wash-room puzzler. For removing heaviest "ground-in" grime from the hands, pH6 is used with the Non-Abrasive Corn Meal Scrubber. pH6 *alone* is ideal for cleansing the face. It even has a soothing, lotion-like effect on the skin which workers are quick to appreciate.

ECONOMICAL FOR PLANT-WIDE USE

STEPAN-pH6 is a non-alkaline, non-irritating sulphonated oil of *dermatological quality.* Yet in cost it is comparable to good grades of industrial powdered hand soap. Convenient dispensing methods are available. Write today for samples and technical data.

SANITIZE THE SKIN
with the modern sulfated-oil cutaneous detergent, to avoid the possible aggravation of symptoms known to occur when soap is used.
PREFERRED BECAUSE
★ it has the same physiologic pH as skin.
★ it contains high-molecular-weight fatty acids, known to be non-irritating.
★ it completely emulsifies skin soil, without lather, and being water-miscible, rinses off easily with any kind of water.
★ it is non-abrasive, non-alkaline, pigment and perfume free.
INDICATIONS
1. Detergent in dermatologic disease . . . 2. Detergent for soap-irritable skin . . . 3. Removal of excessive natural and residual medicinal oil and grease from skin, scalp, and hair . . . 4. Soapless surgical scrub-up . . . 5. Management of acne vulgaris.
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RARE CHEMICALS, INC., Harrison, N. J.
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GALEN COMPANY, Berkeley 2, California
ACIDOLATE
SKIN DETERGENT
671
ACIDOLATE
FOR CONDITIONS BENEFITED BY A SOAPLESS REGIMEN

safety engineer may also be the concern of the personnel director. The goals here are to provide adequate medical and nursing facilities; optimal lighting and ventilating conditions; a minimum of unnecessary noise; clean, pleasant surroundings; first aid facilities; and protection of worker against accidents. The technician studies the causes of accidents on the job and conducts campaigns for the prevention of such accidents. He also analyzes absenteeism and sick leave records to discover means for eliminating unnecessary lost time.

—From "The Field of Personnel Administration," in *Personnel Administration*, April, 1945.

Shock

SHOCK, as observed in military medicine, generally results from a rapid decrease in the volume of the blood due to the loss of blood and plasma proteins. Reduced in volume and often thickened by the loss of more fluid than red cells the circulation of the blood becomes inadequate. Restoration of the volume of the blood so that its circulation by the heart again approaches normal may be brought about by administration of plasma proteins. Proteins are very large molecules, and are the highly specialized substances which are most responsible for the structure and the complex functions of the body. The proteins of the plasma, as of other tissues, differ in size and shape. The smallest dimension of all plasma protein molecules — their diameter — is roughly the same. This diameter is five times that of sugar molecules. Small molecules, indeed all the molecules that have been studied which are appreciably smaller than the plasma proteins, are readily lost from the blood stream into the tissues or through the kidney. They are, therefore, of less value in the prevention and treatment of shock than the plasma proteins which are normally retained in the blood stream. Two out of every three of the protein molecules of plasma are of one kind, called albumin. Albumin is the protein in plasma largely responsible for the maintenance of blood volume. Albumin molecules are the smallest in size, the most nearly spherical in shape, the most soluble and the most stable of the plasma proteins. Albumin can therefore be prepared as a concentrated solution which is as fluid as whole blood, and is effective in the treatment of shock. Large amounts of this very compact derivative of plasma have been prepared and are in use by our Navy.

—From an address by DR. EDWIN J. COHN, Professor of Biochemistry, Harvard Medical School, May 27, 1945.

Noise and Plant Efficiency

EXCESSIVE or objectionable sound can cause mental and muscular fatigue, nervousness, lack of concentration, carelessness and other attendant ills. Regardless of whether the occupation of a person is typing, flying, reading, or running a drill press, the effects of noise prevent the best performance of the job. Lost time, poor work and danger to personnel and equipment may result from continued exposure to disagreeable sound. To avoid these economic losses engineers are soundproofing and eliminating sources of noise from many engines, motors, mechanical and electrical devices. Much has been done in this direction in the past few years and the returns for the efforts expended have been good.

—*Product Engineering.*

Malingering

DR. MARK M. SCHAPIRO, replying to a question he listed in his article "Non-Occupational Absenteeism — A Statistical Analysis," in INDUSTRIAL MEDICINE (14:5, 390-394, May, 1945), says as follows: "It was our policy to record sick leave in actual calendar days lost from the time the employee was first seen by the plant physician until the date of return to work. Sickness claims were paid only in those cases treated by the plant doctor—in this way we were able to curtail many cases of malingering, etc. If an employee was sick for, say 12 days, but was not seen by the doctor until three days before returning to work, the sick claim benefit was only for the time that the employee was actually under the care of the attending physician, or for three days."

Eye-Bank for Sight Restoration

THE EYE-BANK for Sight Restoration—national in scope—has been organized, to collect and preserve healthy corneal tissue from human eyes for transplanting to blind persons who have lost their sight because of corneal defects. The Eye-Bank makes available corneal tissue to hospitals and surgeons who are qualified to perform the corneal graft operation. This operation can restore sight to between 10,000 to

"Old Scratch" is the constant tempter of the pruritus victim . . . for it is next to impossible to control scratching, so often the cause of secondary infection, unless an analgesic agent is available to relieve the torment of itching.

'Calisgesic' Analgesic Calamine Ointment is a greaseless, bland ointment that has proved particularly useful in the temporary relief of pruritus and skin irritations, such as those caused by poison ivy, poison oak and insect bites. It does not stain the skin and can be safely used on children.

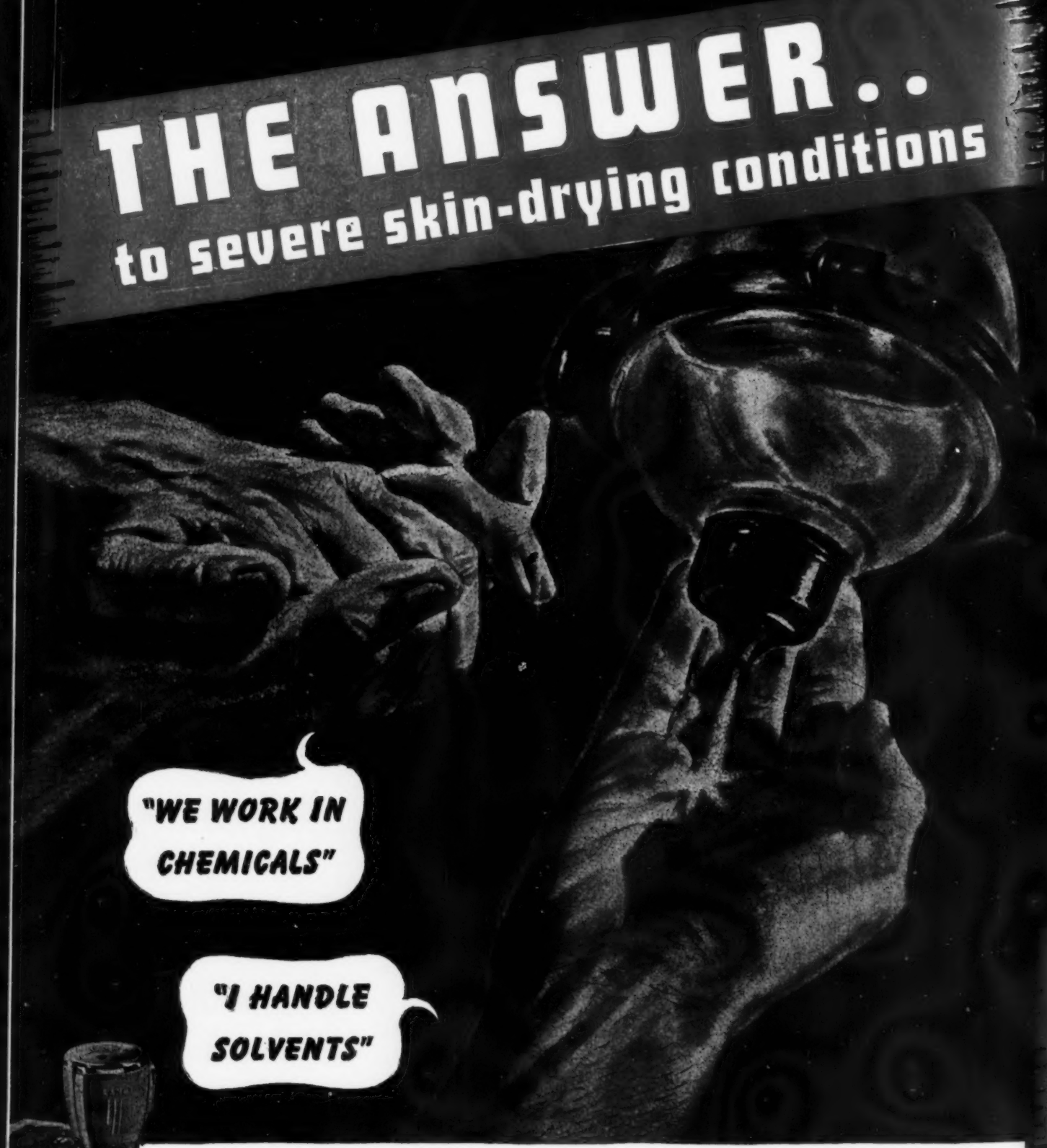
The protective, astringent, anesthetic properties of 'Caligesic' Ointment arrest the almost uncontrollable desire to scratch and bring prompt, soothing relief in the treatment of dermatitis venenata, summer prurigo, pruritus ani, pruritus scroti and other skin irritations and inflammations.

For external application only, each 100 Gm. of 'Caligesic' Ointment contains: Calamine, 8.00 Gm.; Benzocaine, 3.00 Gm.; Hexylated Metacresol, 0.05 Gm. Supplied in 1½ ounce tubes.
Sharp & Dohme, Philadelphia 1, Pa.

'CALIGESIC'
Analgesic Calamine Ointment

Sharp & Dohme

THE ANSWER..
to severe skin-drying conditions

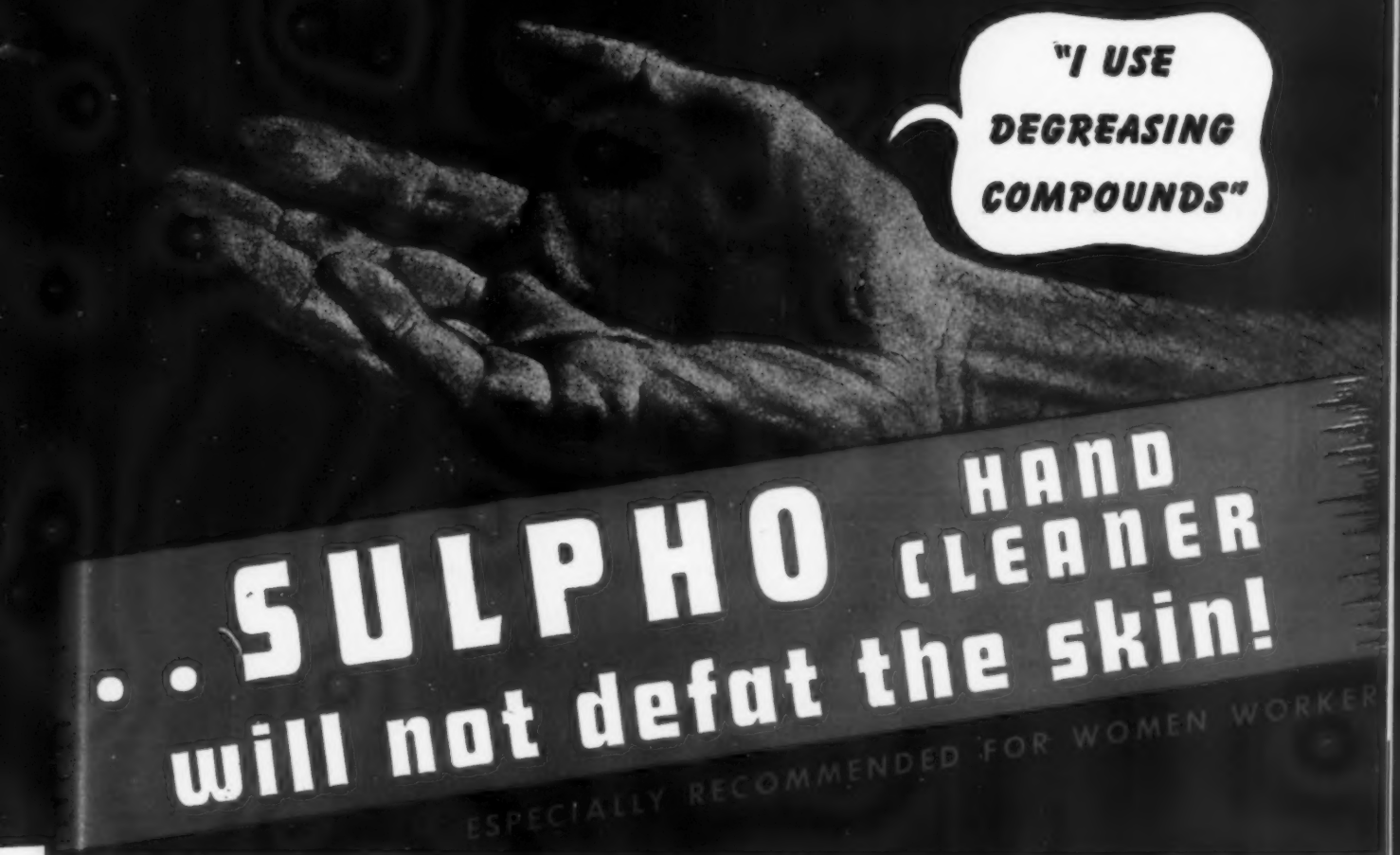


For workers generally, Lan-O-Kleen, the powdered soap compounded with granular cornmeal which has been impregnated with Lanolin, has an amazing story of success. West recommends that both Sulpho and Lan-O-Kleen be made available to give *all* your workers adequate and proper protection.

In many occupations, chemicals are encountered which tend to remove the normal fat of healthy skin and make it more susceptible to dermatitis. Some workers have naturally dry skin which cannot stand frequent washing with even the mildest soaps. For those who have naturally dry skin and for those who must in the course of their work dip their hands in solvents, degreasing compounds and similar materials, West offers this new special type of hand cleaner. Due to the nature of the product, it has an almost neutral pH. It is specially designed not to defat the skin. Sulpho Hand Cleaner is manufactured from the highest quality sulfonated castor and vegetable oils but its cost compares favorably with other products of lesser efficiency.

"'Recently, sulfonated vegetable oils have been used in the treatment of dermatitis. Sulfonation of vegetable and mineral oils makes them emulsifying agents and they emulsify dirt and grease on the skin and help to cleanse it. Being miscible with water they can be used as skin cleansers and are of especial value in that the sulfonated vegetable oils do not defat the skin.'"

*The above is part of Reprint No. 2311 from the Public Health Reports Vol. 56, No. 36 by Dr. Louis Schwartz.



..SULPHO HAND CLEANER will not defat the skin!

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Please send me a SAMPLE QUANTITY of Lan-O-Kleen ☐ Sulpho ☐ with which I will give your claim a practical test. Please include folder explaining its use.

Name..... Title.....

THE ENDERMIC METHOD OF BRINGING RELIEF

In inflammatory and congestive conditions—furunculosis, glandular swellings, contusions, sprains, as well as chest and respiratory affections—the emplastrum Numotizine helps to bring relief in two ways: first, by its local anodyne-decongestive action; second, by the systemic effect of guaiacol and creosote.

The kaolin base allows slow, even absorption of the contained antifebrile agents. There is therefore no shock but a gradual and sustained therapeutic effect.

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FORMULA { Guaiacol ..... 2.60 Methyl Salicylate.... 2.60
Beechwood Creosote. 13.02 Sol. Formaldehyde... 2.60
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15,000 blind men, women and children in the United States. It is effective, however, in only one type of blindness—that caused solely by opacity of the cornea when the rest of the eye and optic nerve are normal. In addition, plans are being made to extend, through scholarships and fellowships, the knowledge and skill required to perform this delicate operation. An Advisory Council includes outstanding ophthalmologists throughout the country. The Eye-Bank's address is 210 East 64th Street, New York 21.

Industrial Medicine Old

IN AN article on medical services in British industry in the *International Labor Review*, Robert R. Hyde, director of the Industrial Welfare Society, traces the history of such service back some 200 years. He writes: "Nevertheless, the value of such association was established by the Crowley undertakings early in the eighteenth century, when a doctor, a clergyman and a schoolmaster were retained voluntarily and jointly by the firm and the employees. The work of this firm was partly done by small master-men, whom the Crowleys supplied with iron, and partly in their factories, and the doctor was doubtless called upon in case of accidents. However, it was not until the appointment of factory inspectors in 1833 that the value of medical supervision in the factory became a matter of public inquiry. The first mention of a works medical officer, as far as the writer can discover, was in 1830."

—*New York Times.*

It's a Habit

DOROTHY THOMPSON, writing from Munich, declared, "If I had anything to say about German re-education I think I would begin by permanently abolishing all these pensions." To the German social security system she attributes "the almost total lack of personal initiative and sense of responsibility, either for the past or the future." The ideal of the German middle class is to fit one's self for some technical or administrative function, says she, then find a nice place to work in until retirement on a pension. Hitler, she finds, was able to rule Germany with outward efficiency because the country was administered by officials willing to work for any regime that guaranteed their security. Well, Bismarck planned it that way, didn't he? And Ferdinand La Salle, Socialist rival of Karl Marx, sold the idea to him, did he not? Dorothy Thompson is a good reporter. The facts as she reports them, however, are not very good sales arguments for pending legislation in Congress to enlarge vastly the scope of social security laws. We like to talk of the "American Way of Life." But it is well to remember that the "American Way" is not the effect of any racial peculiarity of Americans. It is not the result of any special quality of "blood and soil" to quote the Nazi jargon about the "master race." The American way is the effect of a specially strong habit of self-reliance acquired in the settlement of a new land. That habit has been handed down and also communicated to new arrivals in the country. Should the habit disappear, so will the "American Way."

—*Chicago Daily News*, June 25, 1945.

Cleveland Industrial Hygiene

THE Cleveland Bureau of Industrial Hygiene has been set up by the local division of health to help reduce health hazards in industry. The research and educational facilities of Western Reserve University School of Medicine have been made available to the new bureau, which has established quarters in room 207 at the school of medicine building on the university campus, Cleveland. The bureau was established on an order of the Cleveland welfare director as a cooperative venture of labor, industry, the medical profession and the public. HERBERT G. DYKTOR, former chief engineer of the bureau of industrial hygiene of the Michigan Department of Health, has been appointed director. In the immediate future MR. DYKTOR'S staff will consist of two engineers, a chemist and a secretary. As a basis for the operation of the bureau the division of health made a survey of

Guard against burn infection with petrolatum

Modern burn treatment [1, 2] . . . born of experience with war burns and civilian disasters . . . now assumes all burns may be contaminated . . . may become infected.

To prevent new organisms of infection arriving on the burn surface, prompt covering treatment is recognized as a necessary early step in burn treatment . . . (with plasma, and chemotherapy by mouth or intravenously). This protective covering dressing should be non-irritating, non-adherent and impervious to invasive organisms.

'VASELINE' PETROLEUM JELLY
is the world's leading brand of
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Petrolatum dressings that are prepared with 'Vaseline' Petroleum Jelly provide an effective, accessible covering measure against infection . . . against pain from exposed nerve endings.

They eliminate the necessity for frequent and disturbing changes of dressing . . . make possible the "rest" needed by the burn for optimal healing conditions.

'Vaseline' Petroleum Jelly is available in jars and tubes . . . 'Vaseline' Borated Petroleum Jelly in tubes only . . . at drug stores everywhere.

1. J.A.M.A. 125:612–616 (July 1) 1944
2. J.A.M.A. 125:536–543 (June 24) 1944

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In a soothing base of petrolatum and oleostearine, UNGUENTINE offers *added* antiseptic, analgesic, decongestive properties.

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for BURNS

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2. *It fights infection*
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A Norwich* PRODUCT

*T. M. Reg. U. S. Pat. Off.

160,000 individuals in Cleveland manufacturing plants to determine their health status and the state of their working environment. The results of the survey have not been tabulated, although some of the more serious industrial health and accident hazards have been found to exist in newer plants that have sprung up since the war, and it is in these plants having fewer than 500 employees where the first work of the bureau will be undertaken. The survey included as one phase the filling out of questionnaires by employees regarding such things as medical examinations to which they have submitted, whether they have been examined for tuberculosis and venereal diseases and whether they were examined by a physician before going to work in their present place of employment. It is expected that much of the work of the new bureau will be educational and advisory. It will help plants in obtaining the services of physicians and nurses and in installing proper safeguards. When necessary it will use police powers of the division of health to enforce proper standards, but emphasis will be placed on lectures, movies, pamphlets and other educational work. In a statement to the press, DR. JAMES A. DOULL, professor of hygiene and public health at the medical school, said that medical students will profit by the bureau being situated at the school, and it is hoped that the director of the bureau and members of the staff of the city division of health will contribute to instruction of the students. The bureau of industrial hygiene is an outgrowth of the cooperative effort of the health subcommittee of the mayor's war production committee, the Anti-Tuberculosis League, the U. S. Public Health Service, the Cleveland Academy of Medicine and Western Reserve University with DR. HAROLD J. KNAPP, commissioner of health of Cleveland. The project will aid the application of medical science to select the right man for the right job psychologically and physically.

—*J.A.M.A.*, May 5, 1945.

Bureau Plans

BOTH men and women want to work. Employers need workers. There is no absolute necessity for outside aid or prodding to bring these people together. They are all the time looking for one another to fill the jobs that are available. Experience shows that the man who is looking for work would rather go direct to the place where he knows that the work is and talk with the man who can hire him, than to go to a public agency office and register with an employment agency and be classified as to skill, availability and social standing and have a prospective job selected for him. . . . Potential national political power becomes very great when jobs are controlled through the U. S. Employment Service. Patronage is powerful. Many private employment agencies have been put out of business. . . . It seems clear now that the War Manpower Commission has no intention of voluntarily relinquishing the employment service at this time, if ever. But it can be forced out by the indirect method of Congress failing to make an appropriation for the service, and that appropriation is now under discussion for the fiscal year beginning July 1. According to the National Industrial Council there are now some 1,500 full-time employment service offices distributed throughout the country. A vast expansion of this network of offices is being planned by the War Manpower Commission which already has announced preparations to open 696 more full-time employment service offices and possibly 900 additional part-time offices.

—From "Danger Lurks in Unemployment Status," in *Industry*, June, 1945.

DR. PILGRIM

PLAYING the final symphony concert of the season and especially notable was the Symphonic Tale "Peter and the Wolf," by Prokofieff, in which one was greatly impressed with the ability of the composer to show the similarity of the reactions of the animals as depicted by the various instruments of the orchestra, to the emotional characteristics of human beings. At the same concert, the young pianist, Carol Silver, played a very fine performance of Rachmaninoff's Concerto No. 2, Opus 18. . . . READING Dr. Carl Binger's "The Doctor's Job," the 1945 Norton Medical Award, and finding much of interest—a book intended for the laity, but should be helpful reading for all physicians as an example of good reorientation. . . . AT WORK on various problems, one relating to the pathological findings in an alleged case of silicosis in which

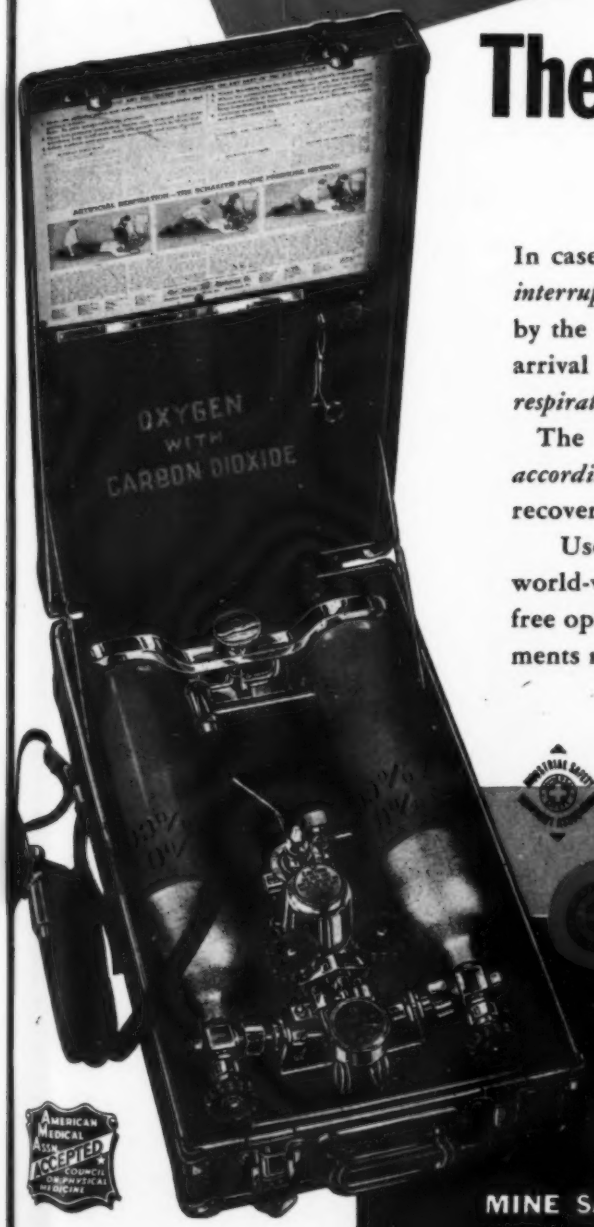
FOR *Safety's* SAKE

WHEN *SECONDS ARE PRICELESS*

...IN LIFE-SAVING RESUSCITATION

USE...

The H-H INHALATOR



In cases of asphyxia, every passing instant is vital . . . *any* delay or *interruption* in applying resuscitation can be fatal! Artificial respiration by the Schaefer prone pressure method must begin immediately. On arrival the H-H Inhalator is applied to the patient *without break in respiratory rhythm or change of position.*

The H-H Inhalator supplies life-giving oxygen-carbon dioxide *according to lung demand* . . . no suction, no pressure are employed . . . recovery is stimulated gently, safely, effectively.

Use the H-H Inhalator for results! Proved by over 25 years of world-wide service . . . for simple, safe, gadget-free operation . . . for speed in application! Shipments now can be made from stock.

Write for your copy of the H-H Inhalator Bulletin CA-9, and arrange for a demonstration at once!

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Safety

The tremendous number of cases of arthritis, published and unpublished, treated with Ertron, testify as to its safety in clinical practice.

Occasionally symptoms of overdosage present themselves, but these are usually of a mild nature and are promptly alleviated on lowering the dosage. Usually the dosage may be gradually increased until the optimum level is again being employed.

The safety of Ertron is one of the important factors distinguishing it from products containing toxic sterols.

The Whittier Process of electrical activation of vaporized ergosterol, together with careful laboratory control, assures a uniform product of uniform safety and therapeutic efficacy.

Ertron alone—and no other product contains electrically activated vaporized ergosterol (Whittier Process).

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Parenteral for Supplementary Intramuscular Injection

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Ertron is the registered trade-mark of Nutrition Research Laboratories.

Views of the left hand of a female, aged 52 years, illustrating an *advanced rheumatoid arthritis;* duration of disease, 10 years; occupation, typist.

In addition to the marked deformities present, the subnutritional state of the tissues is well shown by the dry, shiny parchment-like skin with almost complete absence of the palmar lines. The terminal phalanges show a reddish discoloration of the ulnar surface.

# of ERTRON in Arthritis

Certain of the joints are swollen and discolored, a result of early periarticular inflammation and then secondary growth of fibrous tissue. General involvement: feet, ankles, knees and elbows. X-ray shows the following advanced rheumatoid changes: marked narrowing of all the joint spaces, punched out areas of bony destruction, loss of articular surfaces of the metacarpal phalangeal joints and some lipping and osteophytes demonstrated best in the first finger.

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. . . *proved by scientific study*

If you are looking for *factual* information on this subject, let us send you the following material:

1 Reprint from the April Milbank Memorial Fund Quarterly of the report on "*Effects of Vitamin Supplementation on Absenteeism, Turnover, and Personnel Ratings,*" by Dr. Henry Borsook.

2 A typical company case history, including a report on employees' reactions and results from management's standpoint.

3 The Treatex Vitamin Plan and how it works—concisely outlining the practical aspects of employee vitaminization, dispensing methods, educational material, etc.

4 Names of companies *now using the Treatex Plan* who are willing to give you first-hand information on their own experience.

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there was a division of opinion among the pathologists; and another similar one in which the relationship of occupation with respect to dust exposure had to be correlated with the x-ray and physical findings of the individual; and another with respect to the application of pitch and pitch products to various metallic surfaces; and the working out of the possibility or impossibility of toxic exposures in such operations; and one more on the ventilation of arc welding in a large factory making war materiel. . . . ENROUTE to New York on the Century, reading "Doctors at War," edited by DR. MORRIS FISHBEIN and much impressed with the emphasis on preventive medicine in the armed services and the tabulation of so-called "essentiality" referring to doctors in industry by DR. HAROLD S. DIEHL. . . . CONFERRING on the various problems of health service in industry in New York, Trenton, Rahway, Wilmington and Baltimore, with DRS. A. J. LANZA, M. H. MANSON, A. G. CRANCH, M. N. NEWQUIST, L. HOLLAND WHITNEY, J. F. JOHNSON, JAMES M. CARLISLE, GEORGE H. GEHRMANN, and W. J. FULTON, and MESSRS. ANDREW FLETCHER, E. FINLEY CARTER, and VANDIVER BROWN. Seeing, meanwhile, "Hats Off to Ice," produced by Sonja Henie, and which is really pageantry on ice and in which the music of the old masters is adapted to the rhythmic movements of small and large groups of performers, in both comedy and tragedy; also hearing with much interest and satisfaction "The Song of Norway," based on the immortal music of Grieg, and ending with a great spectacle for both eye and ear with the famous Concerto. . . . READING in review and with much interest Public Health Bulletin No. 99 of the U. S. Public Health Service, published in 1919, referring to "Medical and Surgical Care of Industrial Workers," and written by DR. C. D. SELBY, whose utterances were most prophetic, some of them being set down here: "It has been observed that the accident hazards of the various trades have little bearing on the value of the medical service in small establishments and only slight influence upon the time a doctor may properly give to a place. The real measure is in the physician's ability to make himself useful in the application of the principles of preventive medicine. . . . To use a commercial expression, many industrial physicians do not sell their services to their best advantages. They sell their time, but, in the transaction, they dispose of only a limited part of the abilities their training has developed. Reference is made, of course, to those doctors who are content in treating trivial injuries and perhaps a few minor ailments, but go no further; they are merely mechanicians. To employers, the evident necessity for medical service is to care for the injuries which occur in spite of safety precautions, and, as a class, they do not perceive that physicians have abilities of industrial value far beyond that. It is good business, using another commercial expression, for doctors to bring employers to this realization, and they can do so by creating demands for as many varieties of their service as they may be capable of performing. It is just as true of physicians as of others, that the use of the brain pays better than the use of the hands. . . . There is much talk of fitting workmen to their jobs, speaking from the standpoint of physical qualifications, but very little evidence of its being scientifically done. In order to do this properly and effectively, the doctors should study the physical requirements of all the various factory operations, a task to which they do not readily adapt themselves. It would appear, therefore, that if a comprehensive study were made of job requirements, in the various industries, relating particularly to physical and temperamental qualifications, and the results of such a study were made available to industrial physicians, they would be in a much better position than they are now to apply the knowledge obtained by physical examinations to the proper placement of industrial workers" . . . . NOW the Board of Directors meeting of the A.A.I.P. & S., with DRS. SLOBE, HOLMBLAD, NEWQUIST, HELLER, VOSBURGH, KURZ, WHITTAKER, MCCORMICK, KRONENBERG, SCOFIELD, GOLDHORN, LT. COL. BRANDT, and STEPHEN HALOS, with much of importance discussed and done, and later in the annual meeting, this time held by proxy. . . . AGAIN reminded of the supreme sacrifice of the son, when

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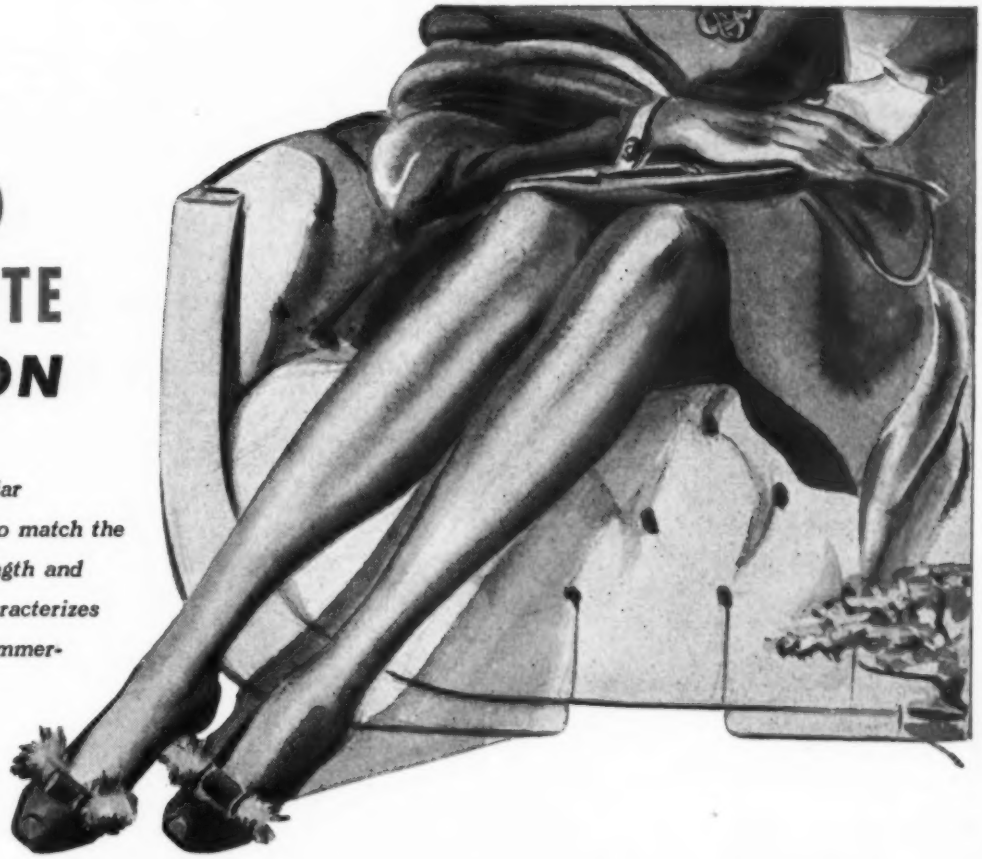
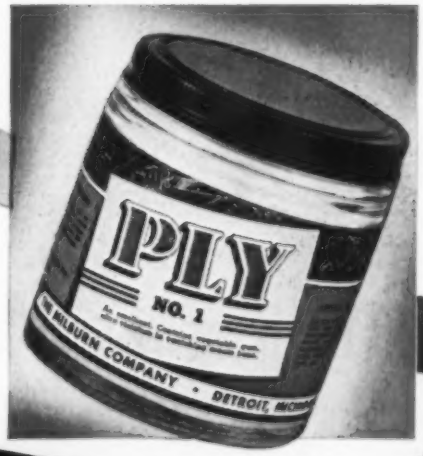
Scientific research has so far revealed nothing to match the sheer beauty, tensile strength and durability which characterizes the multiple uses of commercial NYLON.



. . . and there's NO SUBSTITUTE for PLY!

Safety men, industrial hygienists and production managers, recommend PLY for most effective protection against Industrial Dermatitis. A pre-work hand application of PLY forms an invisible, impenetrable film which guards against grime, oils, greases, chemicals and other skin irritants. There is a specific PLY formula — cream or liquid — for each general group of hazards. A trial will demonstrate the superiority of PLY in your plant.



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receiving the posthumous Presidential Citation on which was inscribed: *"He stands in the unbroken line of patriots who have dared to die, that freedom might live, and grow and increase its blessings. Freedom lives and through it, he lives—in a way that humbles the undertakings of most men"* . . . AND now to the business of many plans and projects that fill the days and nights with ever-increasing opportunities.

CURRENT ARTICLES of QUALITY

Selected Publications

SELECTED Publications in Industrial Health," in *Journal of the American Medical Association*, 128:9, 664-665, June 30, 1945. "The office of the Council on Industrial Health is frequently asked to recommend publications relating to industrial medicine, surgery and hygiene. The list of textbooks and periodicals which follows was compiled from information furnished by the chairmen of committees on industrial health in the state medical societies, directors of industrial hygiene bureaus in state and federal agencies, and by 200 full-time industrial physicians throughout the country."

—C. M. PETERSON, M.D., Secretary.

Books—General Treatment

DIVISION of Industrial Hygiene, National Institute of Health, United States Public Health Service: Manual of Industrial Hygiene. $3. Pp. 508. Philadelphia, W. B. Saunders Company, 1943.

International Labour Office: Occupation and Health, Volume I, pp. 999. Geneva, 1930. Volume II, pp. 1,310. Geneva, 1934. $24 set. Supplements, Geneva, 1938, 1939, 1940, 1944, 25 cents each.

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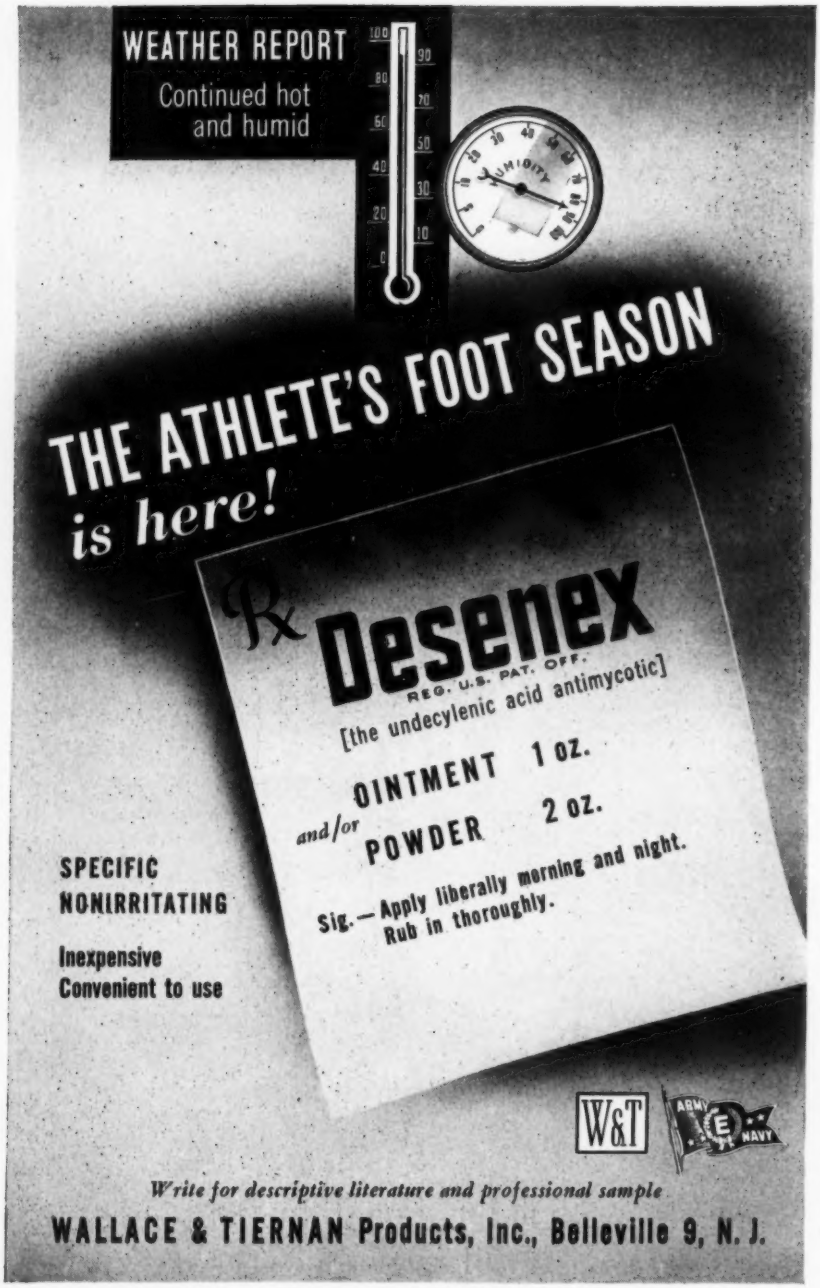

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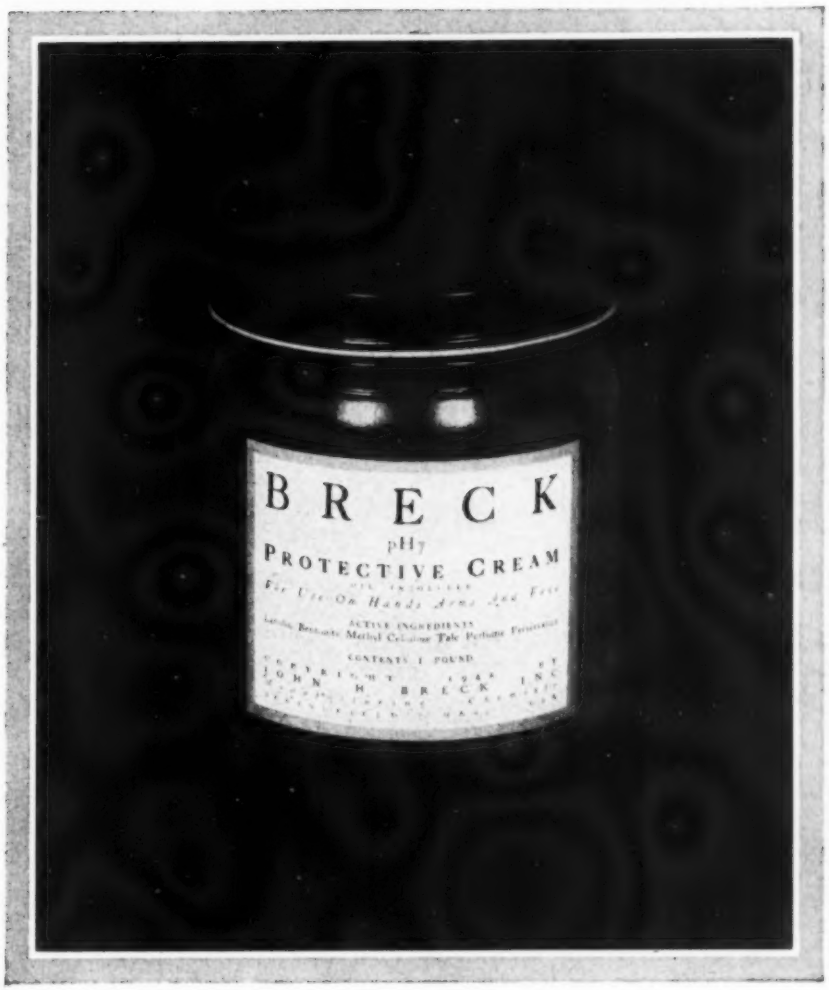

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Medical Service Plans

DR. ROBERT S. YOUNG, of Columbus, Ohio, "Medical Service Plans," in Proceedings of the House of Delegates, Tennessee State Medical Association, published in *Journal of the Tennessee State Medical Association*, 38:6, 169-179, June, 1945, Extract: "In 1880 the Baltimore & Ohio Railroad sponsored a mutual benefit association for its workers. Since 1880 it has paid $34,000,000 in disability benefits to employes, and to beneficiaries of deceased workers more than $31,800,000 of death benefits. In 1912 Montgomery Ward & Company, of Chicago, purchased from an insurance company a group insurance policy. It provided the first group life insurance policy written by any private carrier in the United States. In 1918 the Endicott-Johnson Shoe Company, of Binghamton, New York, established a plan of medical care and hospitalization for all of their workers without cost to the employee. Within recent years we have seen a tremendous extension of medical care and hospital plans in which many different groups have become interested. Medical care plans have been started by many industries; notable are those of the Henry J. Kaiser Corporation, the Standard Oil Company of Louisiana, the Tennessee Coal, Iron & Railroad Company, the National Cash Register Company, and many others. Many labor unions have started plans of their own. One of the largest completely owned and operated union plans is that of the Amalgamated Clothing Workers which operates the Union Health Center of New York City. Within recent years many medical societies and medical associations have developed prepay insurance plans; the most notable is Michigan Medical Service, a state-wide plan operated by the Michigan State Medical Association. There are perhaps some 30 to 40 plans of this type in operation. Organized labor has been quick to use the advantage of cooperating with medical associations. For example, the Michigan Medical Service Corporation, owned by the Michigan State Medical Association, cooperated with the C.I.O. and, in my opinion, for a time C.I.O. was the moving force in the corporation. This plan has been accepted or forced upon some 580 cor-

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porations in Michigan, and Michigan Service, I believe, has been repeatedly used as a tool by union organizers. In addition to these plans there are many cooperative plans sponsored by farm bureaus, the granges, groups of Federal and state employees and benevolent societies. The American Hospital Assocation, through the Blue Cross Corporation, has widely spread the principle of insurance for the payment of hospital costs. Many of the old-line commercial insurance companies have written hospitalization and surgical benefits insurance policies. At the present time there are approximately 18 million subscribers to the Blue Cross Hospitalization plan. An additional 18 million hospitalization and surgical benefits policies have been sold by commercial insurance companies. There are probably an adidtional five to 10 million people covered by union plans, benevolent society plans, cooperative farm groups, federal cooperative groups, and others. In short, there has been a tremendous spread of the prepay insurance principle to the extent that more than half of the population is now covered.

The principle of medical insurance is then: (1) Well established. (2) Rapidly expanding. (3) Of large membership. (4) Being widely exploited by union organizers, cooperative, government groups and employers alike. In October, 1940, the U.A.W.-C.I.O. passed a resolution to the effect that the health of its membership was a fit case for collective bargaining. In June, 1942, the A.F.L. passed the same resolution. This resolution has been passed by practically every union in the United States. It is becoming more and more apparent that the unions are engaged in a crusade to provide medical insurance for their membership. Either under union pressure or in an attempt to beat the union at their own game, many employers have seen fit to establish hospital and medical care programs and pay part or all of the cost themselves. The National Physicians Committee has recently conducted a survey of 1,091 large corporations providing life insurance for workers, and of these companies 544 also sponsor a plan of hospitalization. At the last C.I.O. convention, insurance and medical plans were given top rating as a new and powerful means of gaining and controlling membership. The C.I.O. is pledged to a tremendous expansion of these benefits to be subject to C.I.O. control and the expense to be borne by the employer. In a recent poll of opinion made by the firm of Foote, Cone & Belding, it was shown that 65% of the people of California were in favor of a prepayment plan of insurance for spreading the cost of medical care. As this survey included both the wealthy who admittedly are not interested in this type of insurance and the indigents who cannot pay for this type of insurance, it is obvious that the percentage of the middle and low income group is higher than the stated figure. This poll has been substantiated by others more recent in several other states. The political power that is inherent in all social insurance is doubly present and must be reckoned with in health insurance, for in the minds of the people, medicine has not been divorced of superstition and emotion. Bismarck, when chancellor of Germany, devised social insurance for the purpose of controlling the masses. It was his thought that if they were subjected to a program of excessive taxation their savings would be taken away and they would be unable to provide for themselves in old age, periods of unemployment, sickness, or dependency. If protection was then provided through social insurance, easily given or withheld by quasi legal means, the people would be forced to follow the dictates of the state because the alternate of private resource had been removed. This theory has been followed by many governments, especially those controlled by dictators. By 1934 all but five countries in continental Europe were operating under a compulsory system of socialized medicine. These five countries were Finland, Belgium, Sweden, Denmark, and Switzerland. All five of these

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countries had voluntary plans of medical care. Russia, of course, was operating under a strict system of state medicine. We note as a factor in the social trend in Great Britain the trend toward complete socialization of medicine as evidenced by the Beveridge Report and the White Paper. In the United States, coupled with progressive taxation, the same trend is evident in the Wagner-Murray-Dingell Bill for the extension of social security to cover medical care. This is apparently a part of an extensive program which includes not only the socialization of medicine, but also, to some degree, the socialization and control of industry, agriculture, and lately signs of a move toward control of labor unions is becoming evident. The medical consequences of such a trend can be simply stated as 'an increase in quantity, a decrease in the quality of medical care, and a tightening of the political control of people.' Industry has used the Bismarck principle of control in establishing their ventures in medical care. In my opinion, industrial plans originally were devised for the purpose of controlling labor markets and employees. Similarly, labor unions devise health plans for the same purpose. A labor leader gains a succession of benefits for his membership or that individual is no longer a labor leader. Looking forward to a period of fixed wage rates or perhops a period of decreasing wage rates, it becomes obvious that it is more advantageous for a labor leader to invest a potential wage raise in insurance because insurance will develop cash value or lower premium rates which can be held up as a benefit for membership. If wages fall, such benefits become more valuable and a union member may stay in the union for these reasons alone. As one personally visits and studies such plans it seems obvious that they are set up to control employees or union members. The quality of medical care is of secondary consideration. Both management and union are proud of the equipment in their medical departments and show them with great pride. They speak of the numbers of people that are treated but say nothing of the professional ability of the physicians operating the medical departments. Apparently, the only thought of both industry and labor is to supply medical care as cheaply as possible and disregard quality. Such medical care, though cheap in dollar value, can be expensive in health value. The trend from closely controlled medical departments towards sponsorship of medically operated insurance plans has been brought about by the realization that such control has been characterized by the employment of physicians from the lower professional strata with a consequent low quality of medical care. The designation 'company doctor' is usually given in a spirit of contempt. It is becoming obvious that good medical services may be better provided by the group most interested in the science of medicine—the medical profession. The question arises as to whether the medical profession possesses sufficient administrative ability or political agility to control the economic phases of medical practice. An evaluation of exhibited political power is apropos and can be ably demonstrated by citing some examples. A physician in Argentina, I am told, frequently starts practice by choosing a likely community, practices a year or two and neglects to bill patients for services. When the accumulated charges have reached a sufficient level, patients are notified that the physician intends to run for mayor and if elected all bills will be canceled. The citizens of Argentina being of the same moral fiber as citizens elsewhere promptly elect the physician mayor. From mayor he steps up to other governmental positions. As a result of this process a few years ago, the president and high cabinet members of Argentina were physicians. At one time high courts were made up of three members, two of whom were physicians and one an attorney. This system has been followed in other Latin-American countries. The political power of medicine is also shown by the fact that physicians in Britain have been on strike twice and physicians of continental Europe have been on strike many times, and, to the best of my knowledge, have always gained their demands. The physicians of New Zealand, although they failed to block the passage of legislation to socialize medicine, prevented its inception through refusal to cooperate. Lately that legislation has been withdrawn. The medical profession being a distinct minority with negligible voting power has been slow to realize their tremendous power of position. They can and must control the political and economic phases of medical practice."

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The Journal of Industrial Health, Occupational Medicine and Traumatic Surgery

With which are consolidated "The Industrial Doctor" and "International Journal of Medicine and Surgery."

The Science, the Law and the Economics of Industrial Health

Volume 14 July, 1945 Number 7

Comprehensive Planning for Veterans

—An Outline of Recent Legislative Provisions—

COLONEL JOHN N. ANDREWS,
Officer in Charge of Postwar Activities, National Selective Service System

1. 12,000,000 in Service.
2. 1,700,000 released.
3. Meeting Veterans' needs.
4. Education and training.
5. Vocational rehabilitation.
6. Loans.
7. Unemployment benefits.
8. Mustering-out pay.
9. Hospitalization and medical care.
10. Employment.

A TREMENDOUS challenge faces the nation as it makes plans to readjust the veterans. Every community will share in this far-reaching opportunity. The medical profession, including physicians, surgeons, dentists, nurses, psychiatrists, and others will play a significant role. Those in the field of industrial medicine will be in position to render a most valuable service.

More than 1,700,000 have been separated from service since 1940, and the War Department has announced that approximately 2,000,000 Army personnel will be released in the next 12 months. Already a considerable number of servicemen has arrived from overseas, and because they have been disabled, have high point scores, or because of age, are being released from service. Soon every community will be welcoming an increasing number of ex-service men and women.

Comprehensive plans must be made to insure for veterans their speedy and complete readjustment to civilian life. In perfecting and executing a program for the reintegration of these deserving men and women, valuable experience will be gained for the larger task after Japan is defeated, and demobilization on a very large scale is possible.

The ambitions of veterans will be many. Large groups of the younger men and women will want to return to school and college. Some will seek vocational training. Thousands will return to their old jobs, while many others will seek new employment. Reports indicate that considerable numbers will engage in farming or business, and others will be interested in the professions. A very large number will need hospitalization and rehabilitation before they can be employed. A very critical group to be readjusted will be the two to three million younger veterans who never had permanent positions.

In the case of the medical and dental professions, the readjustment problems will be very great. The task of relocating and reestablishing the 50,000 or more physicians and approximately 20,000 dentists now in military service will be difficult. Many of these are young men who had experienced little or no practice before they entered service. Some will need opportunity for further training, chiefly by means of residences in hospitals and post-graduate study. In the case of many physicians and dentists who had been in medical or dental practice before they entered service, refresher courses of various types will be needed.

Legislation

THE Federal government has made liberal provision for the veterans of World War II. The two most important pieces of legislation relating to the education of veterans are Public Law 346 (G.I. Bill of Rights) and Public Law 16 (vocational rehabilitation). A brief outline of these laws and related legislation is given here to help the medical profession understand the scope of the program, so they can give their full support to the many readjustment problems confronting the ex-service men and women as they seek to become integrated into the social and economic life of the nation.

It must be understood that this legislation, which is the most comprehensive of its kind ever undertaken by any nation, is still in its early stages of administration. As might be expected in any program so broad, certain inadequacies have already become apparent. Steps are being taken to correct any weaknesses and to cover points that could not be anticipated when the laws were passed.

GENERAL *Provisions of Public Law 346 (G.I. Bill of Rights)*:

(A) EDUCATION AND TRAINING:

On June 22, 1944, Public Law 346 became effective. A summary of the main provisions is given below:

1. *Length of education or training period.* The amount of education and training to which the veteran is entitled is dependent upon the length of his active service and age at the time he entered the armed forces. All eligible veterans may have one year (12 months). Veterans who were under 25 at the time of their induction, and those who were over 25 but can

prove that their education was interrupted, are eligible for an additional period not to exceed the length of time they had been in active service.

2. *Service.* The veteran must have served at least 90 days subsequent to September 16, 1940, exclusive of any period he was assigned under an Army specialized training or Navy college "V" program, or period of training at the United States Military or Naval Academies, (or have been discharged for service-incurred or aggravated disability in less than 90 days). He must have been discharged under conditions other than dishonorable.

3. *Payments while in training.* The Government will pay a maximum of $500 for tuition, fees, and books in an "ordinary school year." In addition, the veteran, if attending school on a full-time basis, will be paid $50 a month, if without a dependent, or $75 per month if he has one or more dependents. Reductions will be made for part-time study.

4. *When the training must be done.* The veteran may begin his education or training any time within two years after he is separated from the service, or within two years after the end of the war, whichever is later. The course or courses must be completed not later than seven years after the termination of the war. In no case may such education or training include more than four full years.

5. *Where the education or training may be taken.* The law provides that the veteran may pursue education or training courses at any level—elementary, secondary, college, vocational or technical, graduate, or post-graduate. He may select the institution where he wishes to pursue such education, provided it is approved by the state in which it is located or specifically approved by the Veterans Administration. The institution selected does not have to be in the veteran's home state. He must meet the entrance requirements of the school selected, and must do passing work to stay in school. A course of study or the school attended may be changed with the approval of the Veterans Administration.

6. *Vocational tests and guidance.* Before beginning the course in education or training, the veteran may request vocational tests and interviews if he is uncertain as to the type of education he should pursue. No charge is made to the veteran for this service.

Many veterans have already enrolled for education and training under the G.I. Bill of Rights. The Veterans Administration reports show that as of April 30, 1945, 66,862 applications had been received, of which 62,816 of those considered had been approved. The total number of veterans in training as of this date was 23,552. Large numbers of additional veterans will enroll in the schools and colleges in the months immediately ahead.

The majority (15,849) of those enrolled for institutional training were pursuing education or training courses in the colleges and universities. Trade and business schools accounted for 4,894, and the junior colleges had enrolled 449. Approximately 800 were enrolled in courses below the college level. More than 1,000 had registered for training on-the-job.

(B) LOANS:

1. With $2,000 as a limit of the guaranty, the government will guarantee payment of 50% of any money borrowed by a veteran from a bank, loan association, or other private lending agency for the purchase or improvement of a home, farm, or business. The loan also may be used to purchase live-stock, machinery and equipment necessary to operate a farm or to engage in a business or profession. For example, under the regulations, a physician, dentist, or lawyer could use the loan to equip an office and purchase instruments, books, and other necessary supplies to be used in his profession. The money may be used for payment of delinquent debts, taxes, or special assessments on a home. The rate of interest is limited to 4% per annum, and the government will pay the interest for one year on the guaranteed portion of the loan.

2. Private lending agencies are prohibited from demanding security from the veteran on that portion of the loan guaranteed by the government.

3. The act permits the veteran to insure the remaining part of this loan through Federal agencies other than the Veterans Administration, such as the Federal Housing Administration.

(C) UNEMPLOYMENT BENEFITS:

1. An unemployed veteran may receive a maximum of 52 weeks' unemployment benefits at $20 per week. The law entitles him to 24 weeks of unemployment benefits for the first 90 days of active service, and an additional four weeks' allowance for each calendar month of active service after the first 90 days. Provision is made for persons who are self-employed, and who meet certain conditions to receive unemployment benefits.

2. The unemployment benefits are paid through the Unemployment Compensation Division of each state after the veteran has registered with the United States Employment Service, and if it is unable to find employment for him.

3. To be eligible for the benefits, the veteran, if untrained, must be willing to take a vocational course to fit him for work, and he must not participate in any controversy that results in work-stoppage.

PUBLIC *Law 16*:
VOCATIONAL REHABILITATION FOR DISABLED VETERANS:

1. *Eligibility.* On March 24, 1943, Public Law 16 went into effect. It provides for vocational education or training to overcome employment handicaps suffered as a result of service-connected disability. Eligibility for benefits is determined by the Veterans Administration, and the basic requirements are as follows:

(1) The applicant must have had active service on or after September 16, 1940, during the present war.

(2) He must have been discharged from military or naval service under conditions other than dishonorable.

(3) He must have a service-connected disability rated at 10% or more as a result of service in the present war.

(4) The disability must cause a vocational handicap —that is, it must make it difficult or impossible for the man to work at his former civilian job.

(5) The person must be in need of education or training in order to overcome this vocational handicap.

2. *Length of training.* The veteran who meets the above requirements may be given a course of training not to exceed four years, and not to extend beyond six years after the end of World War II. He is eligible for as much study or training as it takes to become rehabilitated. For example, if it takes two years to learn to be a watch repair man, he would get two years of training.

3. *What the government pays.* If eligibility is established under this law, the Veterans Administration will authorize for the veteran a course of training and will pay all fees, tuition, and cost of books, and allow the veteran a subsistence of $92 a month for single persons, $103 for married ones, $5.75 for each child. and $11.50 for each dependent parent.

4. *The training to be taken.* The veteran may select any new occupation or profession he wishes to learn, *provided* the vocational advisers of the Veterans Administration believe the individual has the physical ability, aptitude, and educational qualifications to be successful in it. Prior to the selection of the training course to be taken by the veteran, a series of tests is given to enable the vocational advisers of the Veterans Administration to determine the veteran's aptitude for a particular trade or profession.

5. *Where the vocational training is taken.* The veteran may receive his training, including training on-the-job, at any institution under contract with the Veterans Administration and selected by the Veterans Administration and the individual for the training.

6. Under Public Law 16, as of April 30, 1945, 67,391 veterans of World War II had filed applications for vocational rehabilitation. The total number in training as of this date was 14,478. Of this number, 10,224 veterans were enrolled for institutional training, and 4,254 were pursuing training courses on-the-job. The total number who had been rehabilitated was 525, and 461 of this group were employed at the time they were rehabilitated.

HOSPITALIZATION AND MEDICAL CARE:

1. The Veterans Administration is authorized to furnish hospital treatment or domiciliary care, including medical treatment within the limits of its facilities, to persons who had served in the armed forces, and who are in need of such treatment or care.

2. If a person about to be discharged from service needs further treatment, he is transferred by the Army or Navy to a veterans' hospital for continuation of treatment. He is also entitled to hospitalization at any time during his life without regard to the service origin of his disability, should hospital care be necessary.

3. Veterans whose disabilities are connected with their military service may, in addition to hospitalization and domiciliary care, receive out-patient, medical, surgical, and dental services for their service-connected diseases or injuries. Treatment may be given at a Veterans Administration Facility or Regional Office, or be authorized to be given by a physician or dentist in the applicant's place of residence. Artificial limbs and other prosthetic or orthopedic appliances may also be secured through the Veterans Facility.

MUSTERING-OUT PAY:

Veterans discharged under honorable conditions automatically receive mustering-out pay from $100 to $300 to help facilitate their readjustment to civilian life.

Those who served less than 60 days receive $100; 60 days or more, but no foreign service, $200; 60 days or more, and foreign service, $300. Certain groups are excluded, such as those receiving base pay of more than $200 a month at the time of their discharge. Any eligible veteran discharged before this law was passed may obtain payments by applying to his own branch of service.

EMPLOYMENT:

After the veterans have completed various types of education or training, they will seek employment. Many of them will need much assistance in securing jobs.

The Selective Training and Service Act provides, in substance, that in the case of any person discharged from military service who has left a position other than a temporary position, and is still qualified to perform the duties of the position which he left, and makes application for re-employment within 90 days after discharge (or after release from hospitalization if this occurs within one year), the employer is required to restore such person to employment in a position of like seniority, status, and pay unless the employer's circumstances have so changed as to make it impossible or unreasonable to do so. After being reinstated in a former position, a veteran may not be discharged from it without cause for one year. Only veterans receiving certificates of satisfactory services have job protection.

If the veteran needs advice with respect to his rights under this provision, or desires assistance in obtaining such re-employment, he may obtain such advice and assistance from a Re-employment Committeeman of the Local Board with which he is registered or of any Board in any city or town in the United States.

Many of the veterans will not have permanent positions to which they can return. The Re-employment Committeeman may be looked to for advice and information and guidance as to appropriate opportunities for new employment. Thereafter the Committeeman may refer the veteran to the United States Employment Service for actual placement assistance. A Veterans' Employment Representative is attached to most of the local offices of the United States Employment service. It is his duty to give unlimited assistance in finding suitable jobs for returned servicemen.

It is encouraging to observe that of the thousands of veterans already released from service, practically all of those entitled to re-employment in their old jobs, and desiring such reinstatement, have been re-employed without delay. Management and organized labor have been most cooperative in helping veterans make their adjustments to old or new jobs.

It is confidently expected that through the combined efforts of the medical profession, educators, business and industrial executives, labor leaders, and others in position to render assistance, a satisfactory program can and will be developed for the reintegration of the veterans into the social and economic life of the nation. The success already attained in this effort gives assurance of its greater success in the future.

Women's Medical Service

—At the Arma Corporation—

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THE Arma Corporation of Brooklyn, New York, manufacturers of naval precision equipment, since the war has incorporated over 2,000 women employees into its ranks. To meet the medical needs of the women in the plant, DR. V. M. MYERS, medical director, appointed a woman physician to his staff. This association began two years ago. It made possible a concerted study of the effects which the rigors of industrial life had on women workers, from a physical-emotional standpoint.

Arma has a well equipped main hospital. It includes a laboratory which is equipped for doing blood counts, urine analyses, basal metabolism tests, and electrocardiographs. X-ray and physiotherapy equipment are available in two other special departments. Several smaller hospitals, staffed by registered nurses, are located in various buildings throughout the plant. These are for the care of persons with minor injuries, which are treated immediately. The workers then return to the shop. More difficult cases are referred to the main hospital for detailed examination and treatment.

Each new woman employee, on admission to the

plant, is given a complete physical examination, which includes a Wassermann and a urinalysis. Upon the physical findings, recommendations are made to the personnel department, of the type of work that the woman can best undertake. Once employed, she is free to visit the doctor when the occasion arises for treatment, industrially or non-industrially.

If the case is one arising in the plant and directly related to her work, the woman may report to the hospital for diagnosis and treatment. Extensive compensation records are kept and progress is noted at each visit until the patient is discharged. Procedures required by the State Industrial Code are carried out in full under this complete medical set-up. Non-industrial cases are diagnosed and treated but once. They are then referred to their own family physician. Everything one sees in general practice, even to acute abdominal emergencies, occurs in the industrial plant. The medical department maintains cordial relations with general practitioners through intelligent handling of non-industrial cases.

Once a year, on the employee's birthday, a complete physical examination is given to determine the wearing effects upon the individual. The medical record is reviewed and recommendations are made. She is referred to her own physician for any condition that needs correction. This type of service is that of preventive medicine. In this way we are able to determine just how well women can "stand up" on the job. The question of fatigue is better evaluated.

Industrial fatigue has been extensively studied in the United States and foreign countries. Much research has been done on the physiology of the subject. The problem in our plant, employing so large a number of women, was what to do about it.

The manufacture of precision instruments requires varying degrees of manual labor in the operation of lathe, drilling, and general shop equipment. Inspection and assembly of finished machinery is another part of the job. The working hours are anywhere from 40 to 50 hours a week. Anyone working a full week without "break" periods during the day, will tire more easily.

We have a health educator who is especially interested in the relief of physical fatigue. The women are given exercise periods and instruction in "limbering up" which may be done at home. Trips are made throughout the plant and the women are observed at their work. They are taught how to handle machines in ways which relieve stress and strain on muscles. Certain selected cases, especially those in which heavy machinery is handled, are singled out and individual instruction given. This type of service has greatly benefited the worker and, at the same time, her work.

Anyone who has ever worked in heavy industry or had an opportunity to observe the workers, realizes that, besides the hard work, monotony of the job is also very tiring. A little time off for mild exercise and refreshments is extremely helpful, and we have found the results most gratifying. In addition the workers are given vitamin B tablets and, in the summer months, salt tablets. The monthly plant magazine, Armaritime, carries articles from the medical department, on nutrition and similar health problems.

When dealing with women a very important problem is that of dysmenorrhea. This problem is gone into very thoroughly when the worker is given her preemployment examination. Naturally under war pressure, a woman who has to be absent from two to three days each month, is not employable. A survey was made on over 1500 cases to find the number of women who experience dysmenorrhea during the menses. The results show 50% of the women suffer from menstrual cramps. The discomfort is anywhere from mild to severe. The percentage of women who have to remain out for a day is practically negligible. Mild sedation with a 20 to 30 minute rest period, usually suffices for the severe cases. The women can then return to their work with very little loss in time.

We also prescribe special exercise for the "dysmenorrheic" after pelvic pathology has been ruled out. The results have been very good. In some cases which did not respond to rest or medication, discomfort was relieved only by mild exercises. We do not consider this a difficult problem. The climacteric presents little difficulty. The women have taken it in their stride. They are much too busy with their work to notice the annoying symptoms which bother the woman with a lot of unoccupied time on her hands.

MOST non-industrial cases which come to the women's medical office are emotional. However, before the symptoms are relegated to the field of psychosomatic medicine, a thorough history is taken and a complete physical examination is done. This type of work is best done by a woman doctor, for women talk more freely and with less inhibition to a woman than to a man.

A working knowledge of psychiatry (in our case a few years of institutional and court experience) is all that is necessary plus a sympathetic and understanding approach to the woman. Vague pains and aches, gastric upsets and nervous "collapse" disappear when an emotional basis is discovered.

The causes of physical complaints for the most part are emotional disturbances which arise in a large industrial plant involving relationships with foremen and neighboring workers. Many have been taught to adjust themselves to their work, their fellow workers, and their foremen. There are also problems outside of work which are upsetting to the women. Many are married and have children and a home to keep, while their husbands are overseas. Others have sweethearts and brothers in the service about whom they are worried. A good percentage of the women who have been absent from work, when closely questioned, are found to be emotionally upset, notwithstanding the note from their own doctor which states "due to overwork." It may safely be said that there is practically no home in the country that the war has not touched in one way or another. Therefore ills with an emotional basis will far outweigh those of an organic type. This observation comes from handling so many of the women where this has been found to be true. It is the cause of a large turnover of women workers in industry at present.

On the whole, it is surprising how well the majority of women can take the so-called rigors of industry. After checking over the women for the past two years, they have been found to thrive on hard work. Most of them feel better and have gained weight. Many were definitely underweight when they were employed and within a year have gained a normal weight, often with a few pounds to spare.

In some cases our problems were those of rehabilitation. Because of the pressure of war, we could not always take just the physically best. We had to take many persons with physical defects who in normal times would not be employable. They had to be suited to the job and rehabilitated while becoming productive. The Arma Corporation has in its employ women suffering from varied physical handicaps. They have been checked carefully and assigned to special jobs, suitable to their type of handicap. These people are excellent workers and definitely not "accident prone." They rarely, if ever, come to the hospital other than for their yearly check-up.

Part of the success of the women's medical service depends upon coordinating the doctor's findings with conditions in the shop. Advantage is taken of our special counselling service in which women counsellors are assigned to various departments to look after the welfare of girls in their shops. This group not only assists in effecting shop procedures suggested by the doctor, but works in close association with her in referring cases for special treatment and guidance.

Arma's medical department has taken an advanced step in industrial medicine by having a woman physician on the medical staff. Any plant employing women needs the specialized understanding, experience, and rapport which a woman doctor contributes to medical service.

Management's Responsibility for Personal Relationships

—Personnel Viewpoint—

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MEMBERS of the medical profession with all their inaudible heartaches, their unpaid bills, and their long hours, enjoy a privilege which is denied most humans in this world—namely, that of working with people as individuals. They consider each man's particular personal troubles in light of his own physical, mental and emotional make-up. Then they prescribe a medicine or treatment which is designed to get the desired improvement from that individual. When one attempt to cure the individual fails, further diagnosis and prescriptions follow in an attempt to find the answer to that particular person's trouble. Even in epidemics, involving thousands of people, individual treatment must be given in order to save the unfortunate victims. And so, for the most part, these overworked doctors are successful in curing the ills of human beings because of their individualized treatment.

How else could medicine be practiced? Certainly you would not prescribe 10 grams of sodium chloride five times per day for all persons who came into your office during the summer complaining that they were tired and run-down. You wouldn't do this because you realize far better than I, who have only read Dr. E. V. Ullman's book "Diet in Sinus Infections and Colds," that excessive salt in a diet upsets some stomachs; creates hydrochloric acid which leads to hyperacidity; upsets the osmotic tension of the body fluids; binds water in the body causing excess weight; and liberates valuable calcium from the body. At the same time there are many people during the summer months who perspire so freely with the slightest exertion that they deplete the salt requirements of their body. When diagnosis proves that one of these individuals needs more salt, a physician will prescribe the same in varying experimental doses until that person's diet includes a sufficient quantity of this precious compound to offset his loss through perspiration but not enough to create other ailments. True, this is rather a hypothetical case, such as would be used by a layman, but it does prove a point if we will compare this procedure with that commonly used by industrial management.

Management's approach is well illustrated by the following yarn. A few years ago the local manager of a southern plant, after reading glowing advertisements, decided that salt dispensers should be installed in every department for the use of his employees. Just prior to the coming of warm weather the employees, on arriving at work one morning, found these new shiny gadgets near every drinking fountain. A little sign said "These are Salt Tablets. Four or five Should Be Taken Each Day." The first day or two many tablets were used, but from then on refilling of the dispensers was unnecessary since none of the tablets were being removed. The management came to the conclusion that the weather was too mild and waited anxiously for a hot spell which would undoubtedly create a demand for those supposed energy rebuilders. However, a month of almost torrid weather failed to generate any interest among the employees in the use of more salt. Foreman began asking questions, but the replies were very vague. Finally one forthright employee gave the answer. He said, "Ah reckons de boss knows what he's doin' but we ain't a fixin' to eat no salt peter lessen we all has to."

Management, as usual, had just put something into effect without any explanation and without any consideration for the differences found in people. Too often, yes, much too often, management prescribes for its employees on a mass basis. Fortunately, management does not have the occasion very often to prescribe medicine for the employees, but I do not see the difference between giving a pill which upsets some stomachs and the posting of a notice which causes the sympathetic nesvous systems of people not only to stop the normal functioning of their digestive systems but also to increase their respiratory and circulatory rates as well. That is just what happens when employees are treated as a mob of identical people who will react uniformly and properly to management's suggestions or admonitions. It is like taking a basket-full of different vegetables (peas, carrots, potatoes, cabbages, radishes, corn, egg plant, squash, etc.) and boiling them for three minutes in the expectation of having them all equally palatable. Management seems to forget that each person is an individual who has his very own personal desires, ambitions, problems, and reactions. Then boards of directors wonder why their employees are unhappy, inconsiderate, unappreciative, and willing to listen to the entreaties of outside organizers.

Something is wrong with our highly developed technique of industrial management in that it has failed to provide this individualized approach to employees. For over 15 years I have been studying books and articles dealing with the management of people including thousands of words of psychology, industrial management, personnel administration, foremanship and the more popular versions of these same subjects. After finishing each of these a feeling of incompleteness has always prevailed in my mind. The answer to the question "How to Deal with People?" remained a mystery. Then in January of last year the American Management Association publication *Personnel* made its regular appearance on my desk. Within its covers was an article by Lawrence W. Appley, Vice-President of the Vick Chemical Company, entitled "Management the Simple Way." Its title intrigued me but on reading it I was flabbergasted, for here in a few words was the answer. Here, presented in a way that everyone could easily understand was management at its best. Strangely enough this was not a new idea, but rather one put forth in the Bible. An old admonition we have all learned in Sunday School classes but, like many others, one we have forgotten to use in our daily lives: "Do Unto Others as You Would Have Them Do Unto You."

Now a goodly number of industrial managers are

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going to say "We have always operated on that basis," but they are apt to be talking when they should be listening. Before anyone makes such a statement he should analyze the full significance of how this very basic management principle must be applied. The only possible application is to put ourselves into the shoes of the other fellow every time we make any decision which affects him. As a beginning, let us consider for a moment what I want in the way of a job. Above all I desire a good boss. One who will treat me as an individual. One who will talk my language and give all explanations, instructions and discipline in such a way that I clearly understand what he has in mind. One who will explain to me in advance every proposed change which will affect my wages, hours and working conditions. One who will keep me informed as to how I am doing and what I can do to improve my performance. I want a superior who is a good instructor. One who tells and shows me what he wants done, and when he expects me to do it. I want a "boss" who is understanding. One I can talk to. A "boss" who is fair and square in his dealings with all people. One who considers all sides to every question which arises. I want my superior to be appreciative of my problems and the results I obtain. All in all, I want a "boss" who treats others as he wants to be treated.

Next, I desire congenial associates to work with. People whom I will enjoy working with. People who are cooperative and work well as a team. Then I want a job which provides an opportunity for me to advance to the limit of my ability and efforts. A job which seems to say "It's up to you." The next thing I look for in a job is security. Will I have regular work so long as I do my work satisfactorily and so long as I contribute more to that enterprise than I am being paid? Lastly, I am interested in obtaining a salary which is in proportion to my contribution and in line with what others get who do similar work.

To sum up my desires, we find the following are requisites: A good boss, congenial associates, an opportunity, security and a reasonable salary. You will have to admit I am not greedy and probably quite human in my desires. In fact, if I have those things, I will not be troubled by periods of depression, worry, anxiety, suspicion or jealousy. Above all, I will do a good job every day if I am fortunate enough to enjoy all five of these advantages.

Personally I do not feel that I am much different from any person who has to work for someone else for a living. With that in mind we can begin our application of personal relationships in industry by seeing that our employees have these same things I desire in my job. Thereafter, it is a matter of day to day treatment. In that connection my immediate superior is the biggest factor. He is the only member of management who is close enough to me to understand my problems, progress and personality. He is the one I *must* be able to talk to when something is on my mind. If he is so busy I can never get a good opportunity to discuss matters with him I will become unhappy to say the least. If he does not help me with my problems I am apt to consult with others who are less able and who do not have our best interests at heart. If he sends me notices or posts bulletins of changes in my status, hours, pay or other working conditions without explaining the reason for them in advance I will quickly become disgruntled. If he shows discrimination in his dealings with the employees under his jurisdiction, I will sympathize with those who suffer or think they suffer as a result. If he does not help me to advance to the limit of my ability and effort I will feel he does not have my interests at heart. These examples of what is expected in the way of day to day treatment could be given indefinitely, but it is sufficient to say I want to be treated just as my "boss" would like to be treated at all times.

Now, management's responsibility for these personal relationships can be easily summarized in one sentence. Management must provide sufficient *able* supervisors throughout the organization to assure that every employee will be treated as each member of top management would like to be treated. This will require an extremely well trained and high caliber group of supervisors. Men who understand people and their physical, mental and emotional differences. Supervisors who unconsciously place themselves in the other fellow's shoes, before they ever make decisions. Foremen who are close enough to their subordinates to keep management accurately informed as to the desires and reactions of the employees. Foremen who are trained to convey the wishes of management to the workers in such a way that these folks understand and accept the reasons for such actions. Foremen who are leaders of men in every sense of the word.

In conclusion may I repeat over and over—it is management's responsibility to assure personal relationships in industry by providing sufficient able supervisors throughout their organization to guarantee that every employees will be treated as each member of top management would like to be treated.

Management's Responsibility for Personal Relationships

—The Medical Viewpoint—

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IN ONE sense the electrical industry with which I am connected is as new as radar, that device by which, in the pitch-black dead of night our boys have sunk battleships beyond the range of the camera or the human eye. In another sense it is older than the Pyramids. The *art* of generating electricity, like the art of practicing medicine, constantly acquires new aspects, but the underlying principles remain unchanged. The year does not pass in which we are not startled by the invention of some new electrical device, or by a miracle-working advance in the practice of medicine. But the discovery of new laws, new principles, is not so simple. And I speak of principles because *it is only by the recognition of basic principles that management can discharge its responsibility for personal relationships.* It is only by a grim, steadfast adherence to principles that the industrial physician can discharge his responsibility to his employer, his patient and himself.

I am a doctor, not a sky-pilot; a physician, not a philosopher; a healer, not a preacher. But, as a doctor, a physician, a healer, I believe that the industrial doctor shares with management a *moral* responsibility to society which is quite apart from material, economic or financial responsibility. Fortunately it is true that a man's success as an industrial doctor varies directly with his success as a practitioner of medicine. The more clearly he recognizes the moral nature of his obligation, the better he will serve the industry of which he is part.

Actually, of course, there are no "industrial doctors," except in the sense that a doctor becomes competent to solve the medical problems that are inherent in in-

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dustry. The best industrial doctor is simply the doctor who is most competent in the practice of medicine and has been able to apply his practice to the industrial field. The moment he forgets that fact he ceases to be a good industrial doctor. Similarly, the moment a corporation forgets that it has a moral obligation to discharge in the personal or medical care of its workers, it will start failing as a unit of industry.

You can shirk a duty. You can evade a responsibility. But you can no more avoid a moral responsibility without paying a price than a bare-handed splicer can handle "hot" wires without a stinging, painful or mortal shock. I stress this point because I believe it is the heart of the problem I have been asked to discuss. Once an industrial executive, doctor, nurse or laboratory worker recognizes that he has a moral obligation to discharge, he has reached the halfway point in the solution of his personal or medical problem.

In the Consolidated Edison System we have what I am told is one of the most efficient electrical machines in the world. Extracting energy from tremendously high-pressure, high-temperature steam, it generates 50,000 kilowatts and then passes along to low-pressure equipment steam which has still enough life in it to develop another 50,000 kilowatts which is enough energy to light a dozen Empire State Buildings. Every possible refinement, such as the generator's hydrogen cooling system, is incorporated in this machine, which makes older units look like relics of the horse and buggy age. But the electrical principles on which that machine is based were not discovered this year, last year, or the year before. They were enunciated by men of science more than a hundred years ago, or, roughly, half a century before electricity first lighted the sidewalks of New York.

Long before that electricity in some degree had been utilized or harnessed by mankind. Electric shock therapy made its appearance, not recently, but in the century before Christ, or earlier. Electric lightning bolts were first controlled in the most ancient times of which we have record. Thus the royal physician at the Court of Artaxerxes recorded experiments in which the Persian King, 2400 years ago, used iron swords to subdue the fury of electric thunder storms.

In our own time we have seen startling advances in medical practice, but the beacon lights which should guide our progress were erected by prophets and philosophers centuries before Christ. As the evolution of society progresses we understand these beacon light principles more clearly, but principles themselves remain unchanged. Thus the concept of the brotherhood of man was understood in Palestine long before the Christian era. I repeat, therefore, that whoever participates in management, whether executive, physician, or supervisor, must discharge moral responsibilities as well as regular routines.

WITHOUT treading on the toes of the private practitioner I may say that the industrial doctor occupies an advantageous position in his treatment of his patients. He is in a position to recommend diagnosis and treatment in many cases where the private physician is held back by the "pocketbook" aspect of the case. Thanks to his intimate connection with his corporation's supervisors, he is in a position to know that a man's health is below par long before the patient's private physician is aware that he is sliding down.

I need not tell you that *early* diagnosis and *early* treatment afford the surest means of arresting or curing a physical or mental ailment. Not infrequently the *timing* of the diagnosis spells the difference between work or unemployment, health or sickness, life or death. In addition, the industrial physician in every instance should have the opportunity of recommending to his corporation's principal executive procedures which can go far toward improving employee health. I refer to procedures involving periodic examinations, medical department attention to absenteeism, medical approval of materials used by employees, etc. It is not only the industrial doctor's opportunity, it is his *duty* to advise management in matters relating to employee health.

Here we come to the nub of the question. Aside from a corporation's medical department, where does the responsibility for employee health rest? To say that it rests with "the supervisors" is not enough. Where a problem is charged to everyone it is handled effectively by no one. Let me say with all the fervency at my command that primarily management's responsibility rests with the corporation's principal officials—with board chairman, presidents, vice-presidents, and department heads. Only when they have recognized *their* responsibility, can we be sure that minor supervisors, down the line will discharge theirs. Make "management's responsibility" read "executive responsibility" and you have the answer to the problem of personal relationships. The private practitioner is not in constant touch with his patients, supervisors and executives. The industrial doctor has the golden opportunity of placing his views before them and seeking if not insisting upon their help in preserving employee health. Only in seizing this opportunity can the industrial doctor discharge his obligation to himself.

The help of supervisors, all the way down the ladder from president to section foreman, is indispensable to the physician seeking early diagnosis and early treatment of his employee-patients. It follows then that he must *know* the supervisors, become acquainted with them, obtain their confidence and "sell" them on the crucial importance of referring below-par workers to the medical department. One of the principal doctors in my own corporation recently spent three months in the field doing that very thing. To do their job competently industrial practitioners must have first-hand knowledge of conditions under which employees work. Through personal contacts they must obtain the confidence the willingness of supervisors to "play ball" with them in watching over employees' health.

The more important a man's job is, the more he feels impelled to retire into an ivory tower and let "someone else" handle supervision questions. I am well aware that executives must delegate matters to their assistants, but the primary responsibility still rests with them. Ivory towers must be torn down if management is to do its job. They have no place in an industrial system which recognizes its moral responsibility for the well-being of its employees. Is this visionary? Impractical? Private enterprise will not survive if management does not recognize and discharge its moral as well as its material responsibilities. The world owes no man a living, but here in the United States, thank God, it owes every man the *opportunity* of making a living—and that is where private enterprise comes in, that is where management comes in, that is where we come in. It is our duty as executives, supervisors, personnel men and physicians, not just to hire and fire but to do our utmost to see that our employees' well-being is so preserved that they can do their work properly and discharge their obligations to themselves, their families and their community.

How far should we go in our effort to preserve employee health? Is a pre-placement examination enough

or should we have the most elaborate medical setup we can devise? Should we begrudge funds for this purpose or is the sky the limit? There is no rule-of-thumb answer to this question. Every industry and every corporation has its own needs and must find its own answers. Here again *executive* responsibility looms large, for in every case the responsible executives, advised by competent medical men, must determine the extent to which their corporate funds will be employed. The ceiling on expenditures for industrial medicine is reached when results equal costs—results in work hours saved, improved job performance, loyalty, and a host of other advantages. Participation by employees in furnishing the funds is, in my opinion, not without advantages to industrial medical programs. The employee who helped pay his own way is freed from any "free clinic" thoughts which might injure his relations with the company and his respect for himself. Labor and management are partners—not servants and masters—in the conduct of private enterprise.

In planning its medical program management must remember that whatever spiritual endowments a man may have, his body is a machine and must be treated as such. Like a machine—a boiler which must be taken out for overhaul—it runs down at times, develops squeaks, rust spots, sluggishness and the threat of breakdown if deterioration is not halted. Managements must remember that the cost of helping men over their health hurdles is less than the cost of replacement. Put it crudely. If you lose your man you lose your investment in this man. Healthy bodies are just as necessary to industry as smoothly working machines, for what good is the finest machine if you haven't a healthy man to run it. As I have suggested, it is fortunate for all of us that the practical necessities of private enterprise run parallel to the procedures dictated by humanitarianism.

If early diagnosis and treatment are the surest way of preserving employee health, how can we be sure that timely diagnoses are being made? We can do this in two ways. First, by winning the confidence of supervisors, and selling them on sending below-par employees to the medical department for examination. Secondly, by annual voluntary examinations—examinations for everybody, from top flight executives to rank-and-file workers. Especially should pressure be placed on supervisors to undergo annual examination. I say "especially supervisors" because the company has a larger investment in them than in the average employee; because a sick supervisor can raise Cain with other employees; because by having himself examined the supervisor sets an example for others to follow. Furthermore I recommend a medical examination for anyone, executive or workman, who has more than three sick absences a year. Over a period of three years most of your employees will be covered this way.

An industrial doctor who is working closely with supervisors, will come in contact with employees who have started the down-hill slide. He will find out what is physically wrong, cure or arrest the troublesome condition and, in many cases, restore his patient to health. Vigilance is necessary, for it is generally admitted that for every man absent from his job two other men are working at decreased efficiency because of a chronic or dormant medical condition. Thus men suffering from chronic nephritis, diabetes mellitus, generalized arteriosclerosis, chronic arthritis and anemia of various types over a period of years will gradually lose efficiency and finally break down. In many cases, the reduction of their efficiency can be halted and a final breakdown avoided by early diagnosis and care.

IN CONCLUSION may I suggest that we rivet our attention on 10 cardinal points which deal with the crux of "management's responsibility for personal relationships." I would outline these 10 points as follows:

1. That the industrial doctor's first obligation is a purely *moral* obligation to practice the best medicine he can in dealing with employees.

2. That this *moral* obligation takes precedence over any economic relationship with his employer.

3. That the best industrial doctor is the man who recognizes and discharges this obligation to practice the best medicine, keeping abreast of current progress in his art.

4. That management, too, has a moral obligation in dealing with the health problems of employees; that management must pay a heavy price if it shirks this responsibility.

5. That early diagnosis and treatment are indispensable to a successful medical program; that the cooperation of supervisors is necessary; that the doctor must go out into the highways and byways of his industry to win the confidence of supervisors so that they will refer below-par employees to him at an early stage of their health decline.

6. That the industrial doctor owes to himself the obligation of telling the truth—*the brass knuckle truth if necessary*—to his corporation's principal executives so that they in turn can institute or enforce the execution of procedures necessary to employee health.

7. That "supervision" is too loose a word to use in assigning responsibility for a corporation's cooperation with its medical department; that executives must delegate to supervisors details of carrying out the program they have adopted but they cannot "pass the buck" to supervisors.

8. That the primary responsibility for these relationships rests with a corporation's principal officers; that "management's responsibility" should read "executive responsibility"; that whatever its efficiency in the purely economic sphere, management can only discharge its obligation to stockholders when it recognizes that, like the industrial doctor himself, it faces a moral obligation to society in handling employee problems.

9. That the sky is not the limit in planning a medical program, that the ceiling of expenditures must be determined by the results obtained; that while industry must be practical in its handling of this problem in the last analysis practical and humanitarian considerations follow parallel lines. In other words private enterprise owes a debt to those who have entrusted it with their savings, but private enterprise cannot survive as a trustee of capital funds if it does not discharge its moral as well as economic obligations to society.

10. That the industrial doctor owes an even greater obligation to returning veterans than to employees who have not risked their health, their skins, their lives to save his; that all returning veterans, without exception, face problems in readjusting themselves to their work, their families and their community, but that returning veterans impose no medical problem which the industrial physician is not called upon to solve every day in the year. Peace as well as war produces broken bodies and broken minds. It is the physician's God-given opportunity to mend these injured bodies and mangled minds. War increases the responsibility, but his technical problem is unchanged. Further, I suggest that we discard thoughts of "postwar" problems. The end of the war has already come for veterans returning to our ranks. If there be a problem—and I see no special problem for physicians—it must be

solved *now* not tomorrow. And, God help the industry, corporation or doctor failing to go the limit in helping these returning boys. Here again moral obligations take precedence over the legal, financial or economic considerations involved.

Use of Paraprol

—In the Prevention of Industrial Dermatitis—
—Preliminary Report—

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IN THE manufacture of propellers, many operations require the use of cutting oil compounds. The most common type of dermatitis encountered with these compounds is a follicular type arising from infected comedones. An inspection of the forearms of many of the workers will reveal numerous blackheads which are not removed by the ordinary methods of cleansing. Previously, I have reported[1] the use of "septicide soap" in the treatment of this condition. One of the ingredients of this soap is ether, which is very effective as a cleansing agent. However, continued usage of this preparation may be irritating to the skin, and a defatting action may also occur. The use of this "septicide soap," therefore, was reserved for the treatment and not the prevention of follicular dermatitis. With the view of preventing the formation of blackheads, a preparation, known as Paraprol,* was formulated and a clinical trial was instituted.

FORMULA: The essential constituents of Paraprol are urea, sodium alkyl sulfonate, benzyl alcohol and tragacanth in a special aromatized vehicle.

ACTION: It will be noted that in this preparation there are present urea, which acts as a detergent; sodium alkyl sulfonate, a wetting agent and detergent, and benzyl alcohol, a local anesthetic. Urea in concentrated solutions is capable of dissolving protein but does not irritate living tissue. Urea is, therefore, used for the debridement of necrotic tissues in infected wounds and the control of foul odors. Certain observers believe that weak solutions stimulate granulation and hasten the healing of wounds.

Sodium alkyl sulfonate is employed as a cleansing agent to emulsify and remove grit, resins or other materials on the hands. It lowers the surface tension between the aqueous and non-aqueous and any oily particles on the surface of the skin. This applies not only to oil grime on the surface of the skin, but also to any solid particles. The problem of preventing industrial dermatitis is primarily one of removing all irritant materials from the pores of the skin. In Paraprol, two detergents—urea and sodium alkyl sulfonate—act synergistically in accomplishing the desired end result. In any industrial dermatitis, the great discomfort is the itching due to the irritation of the skin, and is a factor to be considered. The benzyl alcohol acting as a local anesthetic will allay the itching, and the tragacanth acts as a demulcent to alleviate any irritation. Benzyl alcohol, as a local anesthetic, is approximately 40 times less toxic than cocaine and is non-irritant in the concentrations in which it is employed here. This preparation, with a pH of 7.1, has been adjusted for dermatological, and is adaptable for general industrial use.

It has been stated[2] that approximately 65% of all occupational diseases are skin diseases. Occupational dermatitis is caused by a failure to remove substances encountered at work from the skin and also frequently by the use of extremely irritant and harmful substances to render the exposed skin clean.[3] The practice of using solvents or chemicals to remove dyes or stains is objectionable, as these solvents tend to de-fat the skin leaving it chapped and cracked. Strong alkaline abrasive soaps not only de-fat, but also destroy the protective horny layers of the skin. The destruction of these horny layers is obviously objectionable as they act as a protection against external irritants, and thereby tend to prevent the access of bacteria to the true skin.

Even the type of industrial dermatitis due to hypersusceptibility or idiosyncrasy is materially aided as removal of the aggravating agents will play an important role. Among the latter we find the common injurious agents such as: alkaline soap, hydrochloric acid, nitric acid, sulfuric acid, mercuric chloride, phosphorus, silver, arsenic, lime dust, nickel dust, silk dust, petroleum, lubricating oils, paraffin, shale oil, coal tar and dyes. In all these conditions, the basic treatment is thorough cleanliness, avoidance of irritants and protection of exposed parts. Paraprol is scientifically sound. It will not de-fat the skin. Its pH is so adjusted as to be non-irritating to the skin. It emulsifies the cutaneous oil layer and lowers the surface tension of a wash in water.

ADMINISTRATION: Paraprol was used in the following manner: Before going to work, the patient was advised to rub this preparation over his hands and forearms and to allow it to infiltrate into the pores of the skin. The presence of tragacanth causes the formation of a protective film. Fifteen minutes before lunch time, the patient applies another coating of Paraprol, and then washes his hands in the usual manner. After lunch, the preparation is again applied, and 15 minutes before quitting time another application is made and allowed to dry, then washed off at quitting time. Only a small quantity is necessary to cover the arms and hands. Repetition of the process may be necessary in certain instances.

CLINICAL RESULTS: Fifty workers whose skin presented extensive blackhead formation were selected in the trial of this preparation. Paraprol has been in use for approximately six months. About 40 out of the 50 patients showed extremely satisfactory results. Inspection of the hands and forearms revealed the skin to be cleaner and free of blackheads in about 80% of the cases. The workers themselves have continuously requested more of this preparation. In a questionnaire sent to these workers, information was elicited which revealed that they found Paraprol to be the best preparation made available to date for their hands and arms. The usual protective ointments containing principally lanolin and castor oil compounds which acted merely as a mechanical protection were used previously. There have been no cases of idiosyncrasy to Paraprol and no complaints of any irritant effects on the skin have been received.

The only explanation that can be given for failure in 10 cases would be improper application and failure to use the preparation consistently.

The effect of Paraprol can be demonstrated by taking a small area of an affected portion of the skin and applying the preparation. After allowing the Paraprol to dry for 15 minutes and washing the area in the usual manner, it will be noted that about 25% to 30% of the blackheads have been removed.

SUMMARY: (1) The use of Paraprol in the prevention of follicular dermatitis has been tried clinically.

2. It has been shown to be effective and safe.

*The Paraprol was supplied by the Research Laboratories of The National Drug Company, Philadelphia.

3. Paraprol is worthy of further clinical trial, and I feel it will have a place in preventive dermatology.

4. Paraprol is not intended to obviate the necessity of good industrial hygiene; practice of clean oil and clean wash cloths, and frequent washing of hands.

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The Theory of Occupational Medicine

—Medical Economics—

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IN THE preceding chapter,* mention has been made several times of matters which suggest that there is a definite economic component in industrial medicine. We have discussed the relationship between industrial medicine and production efficiency, as well as absenteeism, labor turnover, accident prevention and other matters of like nature. It has been suggested, that with a proper application, industrial medical care is not only a useful tool of production, but a profitable one, as well. Beyond these things lie other considerations of a more personal nature, which are, again, not only good medicine, but valuable assets to industry, owing to the fact that personal problems reflect themselves, eventually, as industrial problems. Because of the multiplicity of implications in this vein throughout the entire discussion of the underlying theory of industrial and occupational medicine, it is important, now, to give more consideration to the matter of medical economics as such. It is not an easy matter to present.

We must keep in mind that industrial medicine is the application of good medicine to specific problems of employer-employee relationship in a plant or factory. Secondly, that occupational medicine is an extension of this specialized aspect to all places and conditions where effort is transformed into goods or services. Thirdly, we must remember that any individual who works for pay is both a wage earner, and a free member of his community. He is really two people, and his medical problems are thus of two sorts in their immediate application, yet fundamentally the basic and truly medical problems are the same.

For these reasons, a discussion of medical economics must cover at least three separate phases, the social, the spiritual and the practical. In each of these phases consideration must always be had for the fact that it is not possible, in any one of them, separately to evaluate the part played by the science or the art of medicine. In industrial medicine we have what is, perhaps, the best opportunity to begin an analysis of what is meant by the term "medical economics," because most industrial medical programs have been simple, and industry has good methods of recording and analyzing results. Even though we may cover considerable territory in the subsequent paragraphs, it will be advisable, at all times, to visualize the various points from the standpoint of their application to industrial or occupational problems. This is desirable because of their being more amenable to statistical evaluation than similar problems in the field of general medicine. They may be applied, at least mentally, to these more complex matters by analogy.

Before taking up the discussion of the social, spiritual and practical approaches to medical economics, it might be wise to dispose of certain matters which often have been thought of as being legitimate components of the subject. Because they have been so considered, no effort is made to present them here in a facetious manner, yet they must be mentioned for obvious reasons. Many doctors feel they are giving thought to matters of medical economics when they balance their costs and expenses, and the legitimate charges for their education and training against their income as physicians. Upon more thorough consideration, however, this is in no wise different from the problem of maintaining solvency in any form of enterprise. It is primarily a personal financial matter, and has little if anything to do with medicine. There may be further thought given to the economic significance of personal behavior. Unquestionably, there are physicians who feel it wise to avoid ostentation, and the appearance of affluence; even to the point of requiring their wives to dress plainly and do good works in the community. There are other physicians who follow the opposite philosophy and feel that country club memberships and other means of contacting the "right sort of people" are matters of sound medical economics. Yet, any of these considerations are, again, purely personal matters. Idiosyncrasies and conduct based upon expediency may have great significance to the individual, and may be of the utmost importance in his personal economy. Fundamentally, however, these things are pseudo economics, and must be segregated as such, if we are to obtain an undistorted picture of the meaning of medical economics.

If we eliminate the financial and social considerations of the individual physician from the discussion, we must not conclude that the individual is not concerned with the matter. This would be an error of the first magnitude, for, as a member of the profession, he is a participant in the ageless and endless struggle of mankind to overcome disease and disability, to the end of a fuller enjoyment of living. For this participation he receives many unique benefits, not the least of which is his personal satisfaction in being integral, with the entire profession, in the never ending march of medicine toward its ultimate goal of good and adequate care for all.

Medical economics cannot be a private affair. Too much is involved wherein the individual physician cannot play an individualistic part. Not only all of medical history is involved, but all history of all mankind, in its struggle for better living plays a role in and is affected by medical economics. His personal implication in the matter is one of obligation, and not of right or privilege. Only as a responsive and responsible member of the organized profession may he hope for success in his efforts to heal and enlighten those people whose confidence is his. Only as a member of the profession does he have reasonable assurance that he may be allowed to live as an independent professional person. Medical economics, then, must be considered as being a problem of the medical fraternity as a whole, and only by conceiving of it in this manner may we hope to clarify our discussion.

As a member of the profession, the individual physician must give his consideration to the economy of the whole, for today, as never before, his very existence as a self respecting element of society is at stake. Being possessed of a single voice and a single vote, he has no recourse from the force of circumstance which is changing his whole experience and individuality. As an individual he cannot alter legislative error, or popular misconception. He cannot be in all the places where the integrity of medicine is under attack.

*This is the text of Chapter VIII of DR. DICK'S forthcoming book, "The Theory of Occupational Medicine."

On the other hand, it is not suggested, merely because it is organized, that it would be proper or desirable for the profesison, or any other group, to take a blind stand against change or progress. In any event, it would not be possible long to delay natural or normal changes which bring with them better conditions of living for the majority of the people, nor those which are inevitable to altered circumstances throughout the world. It is possible, however, by using the facts of medical economics, to expose illogical deductions, or fraudulent intent, as they affect people. It is most definitely proposed, too, that certain suggested changes in the manner by which medicine is to be practiced will affect all people, and adversely. Furthermore, they are not inevitable, necessary, or desirable, but are being presented as being so by certain groups who would stand to profit thereby. These groups seem bound and determined to rewrite the laws of nature, according to their views. They may succeed for a time, but if we examine the implications of medical economics there may be in them a sound rebuttal.

It is not within the province of this work to offer a full display of all that is implied by the term "medical economics," but, as was stated earlier, we can discuss the matter from three approaches of social, spiritual and practical aspects. With a simplified start such as this, and a good understanding of the basic problems, we may hope, in time, better to comprehend those more intangible and evasive principles which are the foundation of all good medical practice.

In discussing the social part of medical economics, it will be necessary to define this part as being the application of medical or hygienic measures to groups of people, or communities, or nations. Further, these social matters are more or less indirectly applied, and often are taken for granted. Research work, and pharmacological progress, which result in the discovery of new, or more effective means of health preservation or disease prevention are aspects of social medical economics. So are clean water supply and proper sewage disposal; so, also, are public health measures, vaccination, and quarantine requirements. Following this lead, it will be possible to discern many other things which, while still being primarily medical developments, have a profound and lasting social significance. There are many complex consequences to these advances or improvements which are direct results of their application. People live longer, and more of them live. There is less disability in early life, and, because there are more old people, there is more infirmity among them. This poses problems in geriatrics, and in all the economic and social sequellae to living longer. Many primitive and natural checks and balances have been thrown out of gear by good medicine. In the sense and to the degree that medicine is involved in these programs and their results, and the complicating social readjustments they engender, so, in that sense, and to that degree, is the economics of medicine involved.

Thus it becomes obvious that the degree of integration of any society is, to an appreciable extent, determined by the measure to which sound use has been made of medical concepts. Likewise it becomes obvious that once these concepts have been accepted and applied they are not removable by mere whim or fancy. Neither social standards nor social medical economic precepts can be altered independently of each other.

These are a few expositions of the complexity of the interrelationship between good medicine and the society within which it exists. Medicine, however, more than any other profession, is only good to the degree that its eventual and ultimate application is based upon consideration of the individual. Not only is the individual the setting for all achievements involved in social evolution, he is also medically important, in that all medical progress, which later may have been applied as social hygiene, had its inception in his medical care as an individual. There would be no medical profession or no medical care in a government wherein the individual citizen had no significance. Perhaps in the kingdoms and empires of antiquity there may have been court physicians to look after the selected few. A perusal of their armamentaria would disclose little that we could use today, and even today there are primitive races whose medical mumbo-jumbo bespeaks little real comprehension of the importance of the individual. It is only within the framework of a democratic concept of government that medicine as a profession, and as a contribution, could be conceived or kept alive. Therefore it is inevitable that there be a personal component of medical economics, and that this personal component have a spiritual factor is likewise inevitable.

What compunction makes a good doctor? What value to knowing a life has been saved? What gives a patient that decisive, extra will to live, when he knows he is in capable hands? These things, while they have one, cannot be assayed accurately for their monetary value, yet they, too, are a part of medical economics. Too, they are not possible of either application or appreciation directly, but may be transmitted only by precept and example. Integrity, self respect, sincerity, faith, and an abiding conviction of the fundamental decency of man as an individual, are all necessary to the economy of good medicine. Here it is that the physician, as a member of the profession, owes a personal obligation which is at the same time an economic obligation.

Perhaps we should re-obligate ourselves often to these beliefs, and be not afraid of offending thereby, for good medicine touches the soul along with the body. Are we so erudite, so sophisticated, or so discriminating that we may sit in judgment unblushing? Are we too timid to speak of such things? If there is a natural law which endows each human being, to no matter what degree, with a ceaseless compunction to better his lot, then there is a further conclusion to be derived. It is that no political or temporal force can overcome the power of integrity, humility, and sincerity, nor destroy or enslave any profession which is dedicated to these principles.

There are further considerations to be taken, under the subject of the spiritual element of medical economics. In a democratic government and certainly under a profit system of enterprise, as ours is, the enjoyment of the practical benefits available to the individual is dependent upon certain moral considerations. These may be defined as those intangible but satisfying personal rights and liberties which men earn through the discharge of their responsibilities and obligations as members of society. They are those things for which guarantee was sought through adoption of the Constitutional amendments. They are the exemplifications of those thoughts to which expression was given in the preamble to the Declaration of Independence. They are those things which are economically inseparable from the over-all economy of living as free men.

These fundamentals, and what they imply, are a part of good medicine. In upholding and exemplifying them, the medical profession will be discharging one of its most sacred obligations to a normal, integrated system of living. While this may be called the spiritual element of medical economics, yet, as man is compounded of both physical and spiritual components, it

may well be the greater part. It is too intimately involved with the right of free men to make free decisions to be gainsaid.

It might behoove us to ask if, indeed, this is not the foundation upon which the whole structure of medicine rests, and if the answer be in the affirmative, perchance we have been too busy, too long with other considerations. Those who would rewrite the laws of nature to their satisfaction know all this. Their attack upon the medical profession is in line with their understanding of the necessity for the destruction of the individual, if they would create a superstate. If it is reasonable to expect this attack to come, first, upon the most individualistic of all human relations, then it is logical to suspect that this attack is a forerunner of a pre-determined course of action. It can be thwarted most easily by the dissemination of the facts of medical economics.

WHILE the facts of the social and spiritual parts of the subject may be too intangible to be amenable to widespread teaching, there are matters of practical significance which are more amenable. Through a study of these practical elements, a method may be developed for the more ready comprehension of the less tangible components. Because of the lack of an accurate means of assaying the values inherent in social, and spiritual medical economics, too much emphasis on them too early could result in confusion, friction, and the begetting of dogmatic arbitrariness, so it may be well to turn, now, to a consideration of those things which are amenable to statistical evaluation. Thus we return to industrial medicine.

In the preceding chapters somewhat detailed expositions were made of the benefits of good medicine, as applied to all elements in industrial or occupational fields. It would be undesirable to reiterate these deductions at this time, but it is in the application of medical knowledge to the problems arising in industry that we find the simplest method for their evaluation. Thus, to begin the study of medical economics we should gather all available material from industrial sources. To do this, and to utilize it after the material is gathered, will require that industrial medicine become a specialty, and be accepted as a part of the post-graduate curriculum of recognized medical schools. When this first step is taken, there will be a new specialty of occupational medicine, or the application, through analogy, of proved medical programs to the problems of all who work. If due consideration be given to the social and spiritual matters inherent in medical economics, at the time when the practical portion is being analyzed, an inestimable service will have been rendered our way of life.

Certain industrial programs are most amenable to this practical consideration, and high on the list are those which involved expansion of industrial medical responsibility. This added responsibility was precipitated by the requirements of rapidly expanding production whereunder new methods, new people and new materials had to be combined quickly and effectively. Out of this demand arose good programs for job placement and job analysis, toxic products control, group feeding, industrial hygiene, accident prevention and many other more limited plans for counteracting effects of heat, humidity, fatigue and other physiological matters. These programs have been so economically successful that most of them will be retained by industry as normal complements to their regular production methods. Surely, if this be the case, it must be possible to deduce objectively, and with considerable accuracy, their economic implications.

Also under the head of practical medical economics we must consider professional organizations, medical schools, clinics, and foundations which supply physicians with new methods and principles of practice. The recent advances in curative medicine, likewise, have a definite economic value. Such practical matters as these are no whit less important than are the other, but less mundane, considerations mentioned earlier. They have an added value, moreover, in that they are unequivocally medical matters, and at the same time are tangible enough to give forth accurate statistical evidence of their soundness. With such evidence as the starting point, the teaching of medical economics can be off to a good beginning.

Before leaving the subject it might be interesting to give an example of how medical economics may be used to combat innuendo, and the best example of this, in all probability, is the proposition of socializing medicine.

No matter what their source, most plans to date for socialization of medicine give as their aim the improvement of the health of the country. They all stress the argument that by controlling medical practice this goal may be achieved with a maximum of economy. This is somewhat naive in view of the fact that no amount of medical care, free or otherwise, will have an appreciable effect upon health unless the other components of health also are provided for. Thus, any amount of money spent to give more medical care only, will be an almost complete loss if it is to be measured in terms of health improvement. Conversely, to maintain health fully, the suggested costs of supplying "adequate" medical care are too utterly inadequate to merit serious consideration. In other words, the soundest argument for disenchanting the dreams of socialized medicine is the use of its own economic contentions for contrast with the fact that medical care is but one of many factors in the problem of health maintenance.

If it were proposed to socialize medicine for the sole purpose of supplying cheaper or more accessible care, this proposal too could be proved economically unsound. It will remain an unsound proposal until a way has been found to make a horse drink after he has been led to water. It must be remembered that the existence of a number of sub-healthy people in this country is not a result of the cost, inadequacy, or unavailability of good medicine, but is the result of this group refusing to avail themselves of good medicine.

Socialization could force the utilization of available care only after complete regimentation had been achieved, which would, of necessity, control every living act of every living person. Such philosophy does not take into consideration anything but the physical bodies of its proposed beneficiaries, and good medicine knows there are requirements beyond these. While the planners may not think in terms of spiritual requirements, it is sound medical economics to do so. It is within the province of medical economics to state categorically that the mental, physical, and emotional deterioration requisite to the degree of regimentation which would be required to make socialized medicine work, would result in complete health deterioration. This would be a sorry bargain for any possible benefits which could be foreseen.

Yet even this simple and practical attack upon the inconsistencies inherent in socialized medicine cannot be of much value unless it is widely understood. It cannot be widely understood unless there is some focal point for the accumulation of the facts of the economy of medicine and, subsequent to this, their dissemination through teaching. So we come again to find yet

another reason why industrial and occupational medicine must become recognized specialties. They must become so in order that the teaching institutions themselves may be required to rediscover some fundamental facts they seem, recently, to have forgotten. In the teaching of medical economics alone they might, conceivably, re-educate themselves. This statement is made because it is quite apparent that the forces working on the task of discrediting medicine, are also at work to destroy sound education. No plan for regimentation can succeed where the citizens of any country have a knowledge of the facts and historical implications of its greatness. Few subjects contain within themselves a broader base for the study of the problem of people, or nations, than are contained in occupational medicine, in all of its implications.

AS WE COME to the end of this chapter it may be well to philosophize for a moment on the basis of what has been presented. It may seem to be an anachronism to say that the practice of medicine is a most distinctly personal thing, while saying, at the same time, that medical economics cannot be a personal affair. This apparent confusion may be resolved by considering two things. First, that the economics is not the practice of medicine as much as it is the basis from which the practice has been evolved, or, more simply, it is the reference work, not the textbook. The second consideration requires looking at the physician through the eyes of the patient. Through these eyes the doctor is the personification of medicine come to heal his ills, and as such his presence is personal. It is not personal, however, on a man to man basis, and this the doctor must learn to accept. It is not his individual presence, as a man, which creates that essential doctor-patient relationship, so necessary to good medicine. It is, rather, that the doctor comes representing not himself, but medicine.

This is not a new thought. However, if it is taken in conjunction with what is implied in the social and spiritual elements of medical economics a further significance may become apparent. It is the understanding of what medicine means which creates the doctor-patient relationship. Thus, if the patient knows nothing of medical economics this relationship may exist between himself and any practitioner, no matter if the latter be a panel physician, an irregular or a downright fraud. The average ethical physician frequently takes for granted that his patient does understand and feel as he does himself. This is a mistake. If the study of medical economics by the physician does no more than awaken him to the fact that there is much teaching to be done, it will have served its purpose well.

Industrial Medical and Surgical Conference

—Third Annual Conference of the Michigan State Medical Society, Detroit, Michigan, April 5, 1945—

Reported by
C. O. SAPPINGTON, M.D., Dr.P.H.

FEATURING the important subjects with respect to both present-day wartime problems and postwar problems of industrial health and medicine, the Third Annual Postgraduate Industrial Medical and Surgical Conference of the Michigan State Medical Society was held at Detroit, on April 5, 1945. The program was sponsored by the Committee on Industrial Health of the Michigan State Medical Society, in cooperation with the Department of Postgraduate Medical Education of the University of Michigan, the general chairman being DR. K. E. MARKUSON, of Lansing, chairman of the Michigan State Medical Society Industrial Health Committee.

At the morning session, DR. A. S. BRUNK, of Detroit, President of the Michigan State Medical Society, presided. In the afternoon, DR. P. L. LEDWIDGE, of Detroit, Speaker of the House of Delegates of the Michigan State Medical Society, was chairman, with DR. RAYMOND HUSSEY as leader of the Symposium on Postwar Problems of Industrial Health and Medicine.

Morning Session

DR. W. B. HARM, in discussing "Industrial Medicine: Cooperation Between Industrial Physicians and Private Practitioners," stated that sometimes the family physician feels that the industrial surgeon is taking a legitimate source of income away from him, although he forgets that by law industry is held responsible for medical care in instances arising in the course of employment and thus has a right to say who shall render the care. Sometimes also, the private practitioner thinks that industry has employed cheap labor in the form of nurses and first aid men to replace him in the minor industrial field, although he does not mind these things so much as the prescribing of drugs, the latter of which should be done by the industrial physician.

The family physician can help a great deal when a patient comes in with a complaint that has an industrial background, by referring him immediately to the plant medical department—this should be done as protection to the worker, as well as to promote proper professional relationships. Many workers prefer the family physician for minor conditions, but as soon as major problems arise the skill and care that can be given by the industrial physician is readily recognized. If the company has authorized continuous treatment by a family physician, he should immediately send to the plant a report of the disability, probable loss of time and other pertinent information on the case. At no time should he do major surgery or any surgery that might result in compensation without notifying the plant—although an emergency involving life or death would be an exception. Consultation is always wise when the demands of a case are beyond the capabilities of the family physician, and in this respect the family physician should realize that industrial surgery is a specialty in its own right and is not to be confused with general surgery.

Certification of workers after absence or for change of work, by the family physician, also presents a difficult problem to both the industrial and the family physician. Certainly a worker is entitled to a statement to show the facts after he has been sick and under a physician's care, and this should be a confidential report, although it can be given to the patient himself for legal protection of the physician.

The matter of record forms deserves especial consideration. It would be a great help if industrial physicians and surgeons could agree on a check type of form which could be used universally in contacts between them and the family physicians; if the form could be sent out through the local medical societies on small pads, the records would thus not be filled with odds and ends of paper with scribbling on them.

There is a great opportunity for the family physician to be used in work in small plants; he could do preemployment physical examinations, minor first aid and plant sanitary inspections. Finally, the industrial and family physicians between them should be able to see that the worker gets good complete medical care, both on a non-industrial and on an industrial basis, which would be far superior to the average of the governmental plans now being advocated.

DR. E. A. IRVIN, speaking on the same subject "Industrial Medicine: Cooperation Between Industrial Physicians and Private Practitioners," said that industrial medicine is fundamentally preventive medicine and its basic function is health maintenance, the object being to furnish employees with the best possible health protection consistent with (1) the purpose of the industry, which is manufacturing; (2) the employer's responsibility as fixed by law, which is care of occupational injuries and diseases; and (3) the employee's rights as to free choice of medical

counsel in relation to non-occupational sickness and injuries.

The industrial physician has three responsibilities: with respect to industrial hygiene in his plant; with respect to physical supervision; and with respect to consultants and therapy.

Patients consult their private physicians, giving a history of exposure to toxic substances in the course of the work, but many times the true facts are not presented to the private practitioner, although the patient means to be honest. The results are that embarrassing failures in diagnosis have come from neglect to ascertain certain facts as to exposure. It is wise, therefore, to refrain from reaching conclusions until adequate information has been obtained. Information will gladly be given to the private physician to help him in reaching a diagnosis with respect to the type of environment and exposure involved.

Physical supervision is best accomplished by physical examination, either the pre-placement, the periodical, the consultation, or the re-entrance examination after absence. This program has a definite relationship to the private physician because it acts as a case-finding agency and because industry has no wish to treat ailments for which it is not responsible. Industry renders service with a threefold purpose, rendering help to the employee, acquainting him with something of which he would not be aware, working in the interest of early diagnosis and prompt treatment—thereby aiding the private practitioner.

Also in the case of remediable defects which may be discovered on the pre-placement or re-entrance examination, the private physician may not be fully informed as to the type of work on which the worker should or could be employed, and the job requirements may be too great at that particular time. In these instances, fuller cooperation between the private and industrial physicians will relieve many misunderstandings, and probably such consultations could be accomplished by brief telephone calls. Moreover, the treatment of these types of physical defects should all be referred to the private physician.

The good will of the private physicians in general practice can be maintained and the confidence of the workmen gained by the industrial physician's referring cases for treatment that have no relationship to occupation, the industrial physician restricting himself to occupational injuries and diseases and to emergencies to carry workmen through working shifts.

THEODORE P. RYAN spoke on the subject "Problems Arising from Michigan's New Compensation Law." Not all of the answers are available on this subject because of the inexact sciences of law and medicine which are involved.

The broadened provisions of the law were discussed. The law is compulsory for employers of eight or more persons and it was stated that 50,000 employees come under the act.

In 1937, 31 occupational diseases were named, together with the processes and exposures relating to them. Many considered this rather restrictive and inadequate. In 1943, there were certain amendments as to general coverage. Cases under these amendments were compensable without a single injury. Special mention was made of cases of bursitis and arthritis where it is considered there is no greater hazard than in general employment.

In making comparison between occupational disease and accidental injuries, it was believed that adjudication of the latter is less difficult with respect to casual relationships. Circumstantial evidence is valuable in other problems, but, in relationship to occupational diseases, there is more chance for error, and a great deal more critical judgment is necessary for proper and equitable adjudication.

DR. DUDLEY A. IRWIN completed the morning session, discussing "Treatment and Prevention of Silicosis with Aluminum Powder."

DR. IRWIN has been associated with a group interested in this problem for the past 15 years, and he gave a review of the experience of the Ontario Mining Association and also the literature, together with an explanation of the chemical theory. Lantern slides were shown on tissue response to various kinds of dusts.

Kettle's experience with coating of quartz particles with iron was cited, also Gardner's experience with particle size reactions. The solubility principle was emphasized with regard to the type of inflammatory response. It has been shown that coal, iron and sulphur all cut down the solubility of free silica.

Heffernan's theory of unsaturated oxygen was mentioned and discussed. Denny suggested that aluminum powder could be used in about the relationship of one part to 100 parts of quartz to produce nascent hydrogen to absorb the oxygen.

Research work has demonstrated that aluminum gives a benign foreign body response and does not create any difficulty. Aluminum plus oxygen producing aluminum oxide is then changed over to aluminum hydroxide which interferes with the rate of solubility.

Blaisdell's work clinically was then reviewed, and an illustration of the aluminum ball mill leading to a settling bottle from which the individual breathes aluminum was shown by lantern slides. The results achieved by Blaisdell clinically have been promising, and Hannon's work on acute cases has also been of considerable importance. A modified respiratory apparatus was illustrated by slides.

Reference was made to the installation of a dispersal system in the change houses of Canadian mines. Robson has had some 12,000 miners under treatment, Hannon has about 6000, and Johns about 500, while Perry has 200.

This method bids fair, therefore, to take a very important place in the prevention of silicosis and in the treatment of certain types of selected cases in the future.

Afternoon Session

DR. RAYMOND HUSSEY made some preliminary remarks with reference to the Symposium on Postwar Problems of Industrial Health and Medicine, stressing etiology, and making use of the expression "etiology of health." Job analyses, placement, and integration of non-medical groups into medical group activities were also emphasized.

MR. O. L. BEARDSLEY, in speaking on the subject "Selective Placement of Workers: A Personnel Manager's Viewpoint," stated that the outstanding responsibility of the community is to see that the veteran is placed commensurate with his capacities. Germany made this mistake after the first war and power was given to uncontrollable groups.

An important point is to evaluate the people and their capacities first. It will be found that:

1. A high percentage can return to work without restriction.
2. About 40% have recognizable disabilities.
3. Musculo-skeletal and organic problems predominate.
4. About 16% of functional disability shows a field for application and opportunity.

A number of case reports were given illustrative of various types of disabilities and their rehabilitation.

Morning Session

INDUSTRIAL Medicine: Cooperation Between Industrial Physicians and Private Practitioners"—W. B. HARM, M.D., Editor-in-Chief, *Detroit Medical News* and E. A. IRVIN, M.D., Medical Director, Cadillac Motor Car Company, Detroit.

"Problems Arising from Michigan's New Compensation Law"—THEODORE P. RYAN, LL.B., Compensation Attorney, Michigan Department of Labor and Industry, Lansing.

"Treatment and Prevention of Silicosis with Aluminum Powder"—DUDLEY A. IRWIN, M.D., Medical Director, Aluminum Company of America, Pittsburgh.

Afternoon Session

SELECTIVE Placement of Workers: A Personnel Manager's Viewpoint"—O. L. BEARDSLEY, Director of Personnel, Department Service Activities, General Motors, Detroit.

"Selective Placement of Workers: A Medical Man's Viewpoint"—F. E. POOLE, M.D., Medical Director, Lockheed-Vega Aircraft, Burbank, California.

"Psychosomatic Medicine in Industry"—H. GRAHAM ROSS, M.D., Medical Director, National Breweries Limited, Montreal, Canada.

"Health Maintenance Engineering in Relation to Industrial Health"—MAJOR ROY P. WARREN, Sn.C., AUS, Army Industrial Hygiene Laboratory, Baltimore.

Physicians are very useful in this program, especially the industrial physicians. The family physician is also useful in his sphere, and the whole subject is a challenge to the community. Placement, including discipline and efficiency, form the basis of successful supervision here as elsewhere.

DR. F. E. POOLE spoke on the subject "Selective Placement of Workers: A Medical Man's Viewpoint."

An arbitrary classification previously employed has been found to be not so useful at the present time. A simple classification of those who cannot work; those who can, but are restricted to certain types of work; and those who can work without restriction, is probably the best.

Another important conception is that the physically handicapped are not necessarily the vocationally handicapped, but it is difficult to get supervision to recognize this. This conception calls for a more flexible classification and one which will use simple lay terms.

Of all the types, the progressively handicapped persons present the most difficult problem.

Physicians should acquaint themselves with job requirements through the use of placement specialists and a category manual.

MAJOR ROY P. WARREN, owing to a change in the order of the program, was the next speaker, on "Health Maintenance Engineering in Relation to Industrial Health."

There are about a dozen categories of potentially hazardous exposures. This calls for a study of materials, the substitution of materials, isolation of processes, and various other functions.

Appraisal of hazards is accomplished by sampling, analyses, code comparison, and control measures.

With respect to personal hygienic procedures, these are mostly in the realm of personal cleanliness.

Housekeeping is one of the great essentials of health maintenance engineering—poor housekeeping can ruin a good control system.

DR. H. GRAHAM ROSS completed the scheduled program with the subject "Psychosomatic Medicine in Industry."

Out of the war came several important principles: (1) a positive conception of health; (2) study of individuals and their relationship to occupation and environment.

Psychosomatic medicine represents a real return to the individual in the correlation of the mental and physical in the field which is called psychosomatic medicine. The old family physician accomplished this but did not realize it. The industrial physician through his contacts with many people probably more nearly approaches the family physician of today.

In grouping the various individuals, the following categories can be made:

Group 1—those who have emotional disturbances, but no real physical difficulties.

Group 2—those with emotional disturbances accompanied by real pathology.

Group 3—those having disturbances which are purely physiological.

Sickness-prone workers call for a special method of attack and are real psychosomatic problems. Case histories of emotional stress and strain were cited.

The psychosomatic approach is a new trend when particularly applied to the individual, but does not mean that other approved measures should be dsicarded; psychosomatic medicine should be considered as a reinforcement and used judiciously.

DR. C. D. SELBY, in summing up, stated that the program contained a discussion of practices in industrial war service which may be effective in reconversion. It seems best to evaluate our methods now. At the present time, psychiatric procedures are being used in various phases of induction and supervision. Another important factor is the control of the environment. Evaluation of these methods is imminent. The real test is coming during the adjustment period, and psychosomatic medicine will play its very important part.

The Estimation of Back Disability

—Reduced to a Simple Mathematical Formula—

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Mayo General Hospital, Galesburg, Illinois

THE following plan for estimating disability of the back recognizes the function and biomechanics of the back not only as a unit but also as a part of the entire body. All the subjective and objective elements are variable and reciprocal as to individual values. I have, therefore, for practical purposes, given each a decimal value.

ESTIMATION OF BACK DISABILITY

	Components	Unit value	% of loss of unit value	Remainder
1.	PAIN	10%		
2.	DEFORMITY	10%		
3.	DISABILITY	10%		
4.	OCCUPATION INDEX	10%		
5.	RE-EMPLOYMENT INDEX	10%		
6.	RECURRENCE INDEX	10%		
7.	EFFECT ON OTHER PARTS OF THE BODY	10%		
8.	PSYCHOSOMATIC EFFECT	10%		
9.	BEHAVIOR CHARACTERISTICS	10%		
10.	MISCELLANEOUS FACTORS	10%		
	TOTAL	100%		
	DISABILITY			

1. *Pain*
   - during { day / night }
   - during activity at { work / play }

2. *Deformity*
   - appearance—posture { primary / secondary }
   - height of person

3. Disability
   - function { alertness / coordination / strength { at work / at play / at home } / endurance { at work / at play / at home } }

4. Occupation Index (previous occupation)

5. Re-employment Index
   - person's previous occupation
   - a new occupation
   - reduction of wages
   - reduction of desirability

6. Recurrence Index { real / imaginary / insurance index }

7. Effect on Other Parts of the Body { physical / mental }

8. Psychosomatic EFFECT { fear / inferiority complex / security / risk of future injury }

9. Behavior Characteristics, attributable to Back Disorder
   - impression on other people { real / imaginary }
   - effect on happiness of person { athletics / amusements }
   - effect on his household

10. Miscellaneous Factors
    - impression on examiner

Courtesy Lea & Febiger, Philadelphia.

Re-employment of Ex-Service Men and Women
VI. The Soldiers Say Don't Do It

THIS is urgent advice to the wives, sweethearts, parents, relatives and friends of the veterans who are coming back from war. The advice is: stop trying to practice amateur psychiatry on them; don't be misguided by the widely published attempts to tell you "how to handle" these "changed men." Instead, welcome the boys home naturally, as what *they* are—that is, fundamentally the same boys who went away.

This bit of advice is not the writer's idea, not an editor's idea, not the idea of the War or Navy Department. It is the idea of a bunch of combat veterans back from action overseas.

They brought up the subject, and asked that something be written to prevent other homecoming soldiers from having to undergo the patronizing, oversympathetic, kid-glove treatment they had encountered on their own return. They were disgusted with the impression created among their home folks that most returned soldiers were strange neurotics who didn't want to talk about what they'd been through, who had to be handled with care. They wanted everyone to know that returned soldiers asked only to be treated like normal human beings without any of the pampering advocated in most "When-He-Comes-Home" articles.

It began in a hotel room in Richmond, Virginia, where 10 returned soldiers were sitting around "shooting the breeze," mostly about how it seemed to be home. One of them mentioned the campaign in the American press telling people how to act when Joe comes home. That set them going.

"My wife had been reading a lot of that tripe," said one infantryman, wounded in Italy. "It damn' near spoiled my leave. Here I was, full of the war, wanting to tell her what I'd seen, and how I got nicked—all the things I couldn't put into letters. She'd just listen, never say a word, never ask a question. It seems she'd swallowed some article telling wives they mustn't talk about the war; mustn't show any interest, my God, in the thing which has completely absorbed their husbands' lives for two years and more!"

"It's stupid," another boy said. "Crack down on it! We heard about it over there from replacements, heard they were treating us queer. Same propaganda in magazine fiction, too. Do they think *we* can't read?"

One boy with a cast on his leg said his mother went through the most extraordinary performance, never even asking how he was hurt, never mentioning the cast, pretending not to see it—but all the time, he said, "treating me as if I were her pregnant daughter."

"Yeah, I know," said an ordnance sergeant. "Ma kept watching me all the time, trying 'not to do anything that would make me nervous.' Of course that just made me nervous as hell."

A gunner chimed in: "I was visiting my brother, and everything was going fine until his wife piped up, 'Don't ask him any questions.' Why don't you write a piece telling people to forget all that nonsense and be natural!"

All this is in sharp contrast to the recent spate of articles and advertisements purporting to help relatives "help" veterans in their "painful readjustment" to civilian life. A program book of the Office of War Information admonishes, "Avoid questions of combat experience"; similar warnings have appeared not only in books and magazines but even in advertisements. Writers of such nonsense should have been at St. Albans Naval Hospital and heard four sailors laughing at this one: "To ask him about the new lands he has visited and the folkways of the people is quite in order."

No man likes to be prodded into talking about his combat experiences unless he is in the mood for it. Some men never want to. But, given a little time and sympathetic listeners, the normal service man *wants* to talk. Why not? They are the most exciting, the most terrible, the most important, the most interesting things that have ever happened to him in his life, or probably ever will. What else would he talk about?

He has been writing home. He imagines you have read his letters over and over, as carefully as he read yours—that you tried to read between the lines, figure out things he tried to get across to you without violating the rules of security. "Now what happened that made you break off such and such a letter so suddenly?" "What ever became of Sergeant Valetti you mentioned once?"—Such questions show your genuine interest and understanding.

A naval officer put it this way: "I was at a dinner party the other evening, and the hostess turned to me and said, 'You were on an aircraft carrier, weren't you? Tell us some of your experiences.' Like everybody else in the service I resented being put on the stage as a trained seal. But my little girl asked me, 'Daddy, what's it like when a bomb goes off on a ship?' Now, that started me talking! You see, she's only eight, and she never read any propaganda on how to treat papa."

One piece of guidance which spread into millions of homes says: "If he chooses to talk about these things, it will help him if you listen well." This patronizing tone would insult a boy home from prep school, let alone a man home from war. Its implication is that mother or dad or wife actually has no real interest in what the veteran has to say but out of some therapeutic concern for his welfare can be persuaded to "listen well." A sailor, back from Antwerp, read this gem and shook his head when he found that its source was a mental hygiene organization.

"So we're all mental cases, huh?" he said.

My own friends have come back from overseas after plenty of rough experiences. They're the same men who went away. More mature, of course. But the convivial ones are still convivial, the reticent ones still shy. Common

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THE SERIES of booklets on "Re-employment of Ex-Service Men and Women," prepared by Associated Industries of New York, Inc., contemplated the five titles which were published in INDUSTRIAL MEDICINE as follows: No. 1, "Obligations of Employer" (INDUSTRIAL MEDICINE, October, 1944); No. 2, "Job Analysis for Sound Placement" (INDUSTRIAL MEDICINE, November, 1944); No. 3, "Medical Program" (INDUSTRIAL MEDICINE, December, 1944); No. 4, "Placement and Follow-up" (INDUSTRIAL MEDICINE, February, 1945); No. 5, "Training Methods" (INDUSTRIAL MEDICINE, March, 1945). In the foreword to this, the sixth of the series, Associated Industries says: "This series of booklets has resulted in numerous requests for a sixth booklet offering practical suggestions on how to deal with so-called mental cases. We have sought sound advice and we are convinced that this particular subject is receiving much unfortunate and unwarranted publicity. The *Readers Digest* recently published an article titled 'The Soldiers Say Don't Do It!' which was condensed from a longer article appearing in *Common Sense* magazine. 'The Soldiers Say Don't Do It!' seemed so packed with common sense that we secured permission to reprint it as the sixth in this series of booklets. We commend 'The Soldiers Say Don't Do It!' to your careful and thoughtful attention. We believe that everyone directly concerned with veteran placement will find it thought-provoking and reassuring. We acknowledge with gratitude the courtesy of *Common Sense* Magazine, 10 East 49 Street, New York 17, New York, and of the Readers Digest Publishing Company, Pleasantville, New York, in granting us permission to reprint the article as it appeared in the *Readers Digest*." In a letter accompanying the booklet, Associated Industries says: "Barring unforeseen developments, this booklet will be the last in the series."

sense tells you that would be true—and common sense plus your natural tact would cause you instinctively to encourage one man to talk and let the other sit quietly and take it easy.

Yet some psychiatrists write didactic generalities. Says one magazine article: "Not only will your Joe come back changed; he is changed already." Certainly combat has had its effect on him, but basically he is the same man. What he needs most is intelligent handling and time to adjust himself to civilian life. Throughout human history many men have gone through horrors, hardships and suffering without emerging as psychopathic changelings. They are matured by the experience, and when their personality *is* changed, it is often for the better. Hardship sometimes tempers a man.

The words of a Marine officer, back from South Pacific duty, blow through the mists like a clean breeze:

"The whole thing is wrong—trying to set up rules on how to treat men back from war. There are no rules. Every man is different. People draw up plans about just how they're going to act when Johnnie comes through the front door. Then Johnnie comes in through the back door, and they're all upset."

There's been a lot of advice printed telling wives to make allowances for this strange man who has come home, and for his strange new habits. Some of this advice is wise; some of it seems downright petty. It would be just as valid to remind wives that, except in the front lines, he's used to very tidy housekeeping, and he's used to having his chow on the dot—and plenty of it. And he is not used to having the mess sergeant regale him with stories about the troubles he has getting this or that, or how tired he is from standing over the stove. Maybe *he* has as many allowances to make as she.

More serious is the letdown from tension and excitement. Civilian life, after the novelty wears off, may seem pretty dull to the veteran. But there's no recipe for dealing with that, other than the good old formula of common sense. He has to face it, and nobody helps any by treating him as a "case." However, as one of the boys said, "If I could adjust myself to the sudden hell of jungle fighting, why can't I easily adjust back to the simple and familiar ways of civilized life?"

Major General Norman T. Kirk, Surgeon General of the Army, says, "The average soldier returning to civilian life is basically the same man he was when he went away. True, the rigid training, the disciplined life, the experiences far from home have matured him. But to feel that each returned soldier is a 'problem child' is to underestimate the character of American manhood. The large majority of these men can take their experiences in stride and can return to their jobs finer citizens, ready and able to shoulder their share of responsibility in the civilian world."

Maybe it's we civilians who have been neurotic about this; losing our perspective. Certainly we ought to remember that after the last war the great majority of veterans were simply their own normal selves when they came back, and often went on in matter-of-fact civilian life to achieve great success and distinction — which would hardly have been possible if they'd all come back with strangely shattered personalities.

Major General David N. W. Grant, head of the Army Air Forces medical services, deals with men who are, by and large, the most highly strung bunch of youngsters ever assembled. If any veterans needed to be regarded as "special" it would be they. But General Grant says flatly, "Much of the stuff that's being printed is nonsense." He adds:

"This is the challenge we face each time a war veteran returns home—to see that he has full opportunity to spring back to his original personality curve. Given a little time and a little help most of them will. Removal of abnormal stress and tension is cure enough in most cases. But the change from an environment of tension to one of relaxation is a radical one and, in instances in which the fatigue of the personality has been great, special help must be given in making the adjustment."

And for a calm bit of wisdom, hear Major General William R. Arnold, Chief of Chaplains, U. S. Army: "Let's not underestimate the courage and common sense of returned service men. Be natural, friendly, and normally glad to see them. Welcome them home. Encourage them to talk about their experiences. Genuine respect and affection will do more than all studied efforts to heal the hurts of the human spirit."

Clinical Trial of Vitamin B_1 and Vitamin C

—In the Prevention of Heat Diseases—

LOYAL A. SHOUDY, M.D.,
and
GILBERT H. COLLINGS, JR., M.D., M.P.H.,
Bethlehem Steel Company

THAT vitamins are essential for health and that they are effective in the prevention and treatment of certain diseases, no one can correctly deny; on the other hand, their indiscriminate use for any and all conditions where there is no established clinical proof of their value, is apt to lead to failure. Rapidly approaching this state of failure is the use of vitamin B_1 and vitamin C in the prevention of heat diseases. The evidence has been highly controversial in regard to the ability of supplementary doses of these two vitamins to prevent heat diseases. Work completed by Mills, Hardt, Still, McCormick, Holmes, Foulger, Sargent, Robinson, Johnson, and others, [2, 5, 10, 12, 16, 18, 27] in an effort to determine the effects of vitamins on resistance to heat and hot humid environments has produced varying results, and furthermore, there is a diversity of opinion as to whether there actually is any significant loss of vitamins in profuse sweating. [1, 27] Since most of this work has been done with laboratory animals, and, until recently, that with humans was inconclusive, the industrial physician has been unable to determine whether he should or need not supply additional vitamins to employees working in hot places.

One of us* has secured evidence that there is depletion of the vitamin C content of the body during severe attacks of heat disease. However, the implication that these two vitamins given in supplementary doses in addition to the salt and dextrose customarily used, will further reduce the incidence of heat disease, has no basis in fact. Reports of the Harvard Fatigue Laboratories within the recent past[27] have quite definitely shown that even under extreme conditions when a man may lose 10 to 15 liters of water by sweating, the total vitamin loss is less than that excreted in the urine.

We have experimentally tested the value of vitamin B_1 and vitamin C as prophylactic agents in heat dis-

*COLLINGS: Studies on the physiological changes in heat exhaustion and cramps. To be published.

ease for men in extremely hot work in steel mills. Two sets of experiments were conducted:

I. Experiments were carried out by the senior author to determine whether vitamin B_1 or vitamin C alone had any effect in reducing the incidence of heat disease as compared to salt and dextrose alone.

This study was conducted on 150 men, all working in departments where heat is a factor. The 150 men were from three departments and the period was for two months (July and August). Fifty men were from the Press Forge, 50 from Rolling Mills, and 50 from the Drop Forge. These 50 men of each department were divided into groups of 25 men each.

One group of 50 men (25 Press Forge and 25 Drop Forge) were given (for period of two months) Tablet No. 1:

Sod. Chloride	7 grains
Calcium Gluconate	1/4 grains
Pot. Sulfate	3/20 grains
Mag. Phosphate	1/10 grains
Thiamin Chloride	.333 mg.
Ascorbic Acid	.10 mg.

One group of 50 men (25 Press Forge and 25 Drop Forge), were given Tablet No. 2:

Sod. Chloride	7 grains
Calcium Gluconate	1/4 grains
Pot. Sulfate	3/20 grains
Magnesium Sulfate	1/10 grains
Sucrose	3 grains

One group of 50 men (Rolling Mill) were divided into two groups of 25 men each. One group of 25 men were given tablet No. 2 and the other group of 25 men were given tablet No. 3:

Thiamin Chloride	.333 mg.
Ascorbic Acid	10. mg.

Groups taking tablets No. 1 and No. 2 made no complaints and carried on their work as usual and no heat sickness developed.

But the first group, on tablet No. 3 (vitamins), complained after the first week that the tablets were "no good," and five definite heat cases were reported in this group. Before the end of the second week they reported they could not continue; therefore the regular salt and sugar tablets were added and no further complaints occurred.

We repeated the No. 3 (vitamin) tablets on another group with about the same results. After the first 10 days four heat cases reported. When salt and sugar tablets were added no further heat sickness was reported.

In so far as tablets No. 1 and No. 2 are concerned, there was no difference in effectiveness noted. The men experienced no increase of work ability or comfort when they were on the vitamin combination tablet No. 1 or tablet No. 2. But when given tablet No. 3 (vitamin) they all complained that they could not continue, and nine cases of heat sickness reported.

Definitely, vitamins alone will not prevent heat sickness.

II. The junior author has conducted the experimental trials of vitamin B_1 and vitamin C in addition to the use of salt and dextrose to determine whether these vitamins, when given in sufficient quantities with salt and dextrose, would reduce the number of cases more than possible with salt and dextrose alone.

Description of the Study

APPROXIMATELY 600 men who were regularly engaged in very hot work in our open hearth furnaces were selected for a trial of thiamin and ascorbic acid. All the men included in this group were men who worked at or on the furnaces themselves and only men who worked at one particular open hearth shop continually. It excluded all men who might, on occasion, work a few days at one of the open hearths (repairmen, electricians, etc.). It also excluded men who, by the nature of their work, though continually in the open hearth department, were not regularly exposed to the heat during most of the working shift.

These 600 men had (as had all our employees) been accustomed to the use of simple compressed salt tablets consisting of 7 grains of NaCl and 3 grains of dextrose (henceforth referred to as "plain salt tablets") provided by dispensers at convenient points throughout the mills.

Our open hearth shops are three in number. Each was treated as a separate unit so that our subjects were conveniently divided into three groups, those in the No. 3 open hearth being used as control. It was necessary to run a control group since the vitamins so kindly furnished us for this work* were combined with a few minerals in addition to salt and sugar, and it was felt that the control should contain these additional elements which our customary plain salt tablsets did not have. For an entire year, the men in the trial groups were supplied tablets of the following formulae:

Ingredients	No. 1 Open Hearth "Heat Tablets C"	No. 2 Open Hearth "Heat Tablets B"	No. 3 Open Hearth "Heat Tablets A"
Sodium Chloride	7 grains	7 grains	7 grains
Calcium Gluconate	1/4 grain	1/4 grain	1/4 grain
Potassium Sulfate	3/20 grain	3/20 grain	3/20 grain
Magnesium Phosphate	1/10 grain	1/10 grain	1/10 grain
Thiamin Chloride	0.333 mgm.	0.333 mgm.	0.000 mgm.
Ascorbic Acid	10.0 mgm.	0.0 mgm.	0.0 mgm.
Sucrose	3. grains*	3 grains*	3 grains*

*Sugar coated to lessen nausea.

Thus we have three groups of similar men (age, race, occupation, etc.) in similar jobs but with one group supplied a tablet of various salts and sugar as a control; one group with tablets of the same content plus vitamin B_1; and one group with vitamin B_1 and vitamin C added to the control formula. The suggested dosage was the same as the men were accustomed to take of the plain tablets viz. 6-8 per day. All tablets were sugar coated, in contradistinction to the plain tablets that had been in use previously.

Results

IN TABLE 1 are given summary data of the number of cases of heat disease seen in the clinic during each year following 1939. In addition, the number of cases from each of the three open hearths used as the basis of our experiment are given for each of these years.

TABLE 1.

Year	Total No. of cases	Cases from No. 1 O.H.	Cases from No. 2 O.H.	Cases from No. 3 O.H.
1940	225	36	10	10
1941	260	31	16	13
1942	110	21	7	8
1943	67	14	6	4
1944	38	4	2	1

It is clearly evident that we have been seeing fewer and fewer cases from year to year since 1939. The number of men exposed to excessive heat has not varied significantly during these years and this observed decrease in number of cases has been due to a continuous educational program designed to inform the employee of the advisability of an adequate salt intake. It is surprising how many false ideas and rumors the men can concoct about the dangers of cooperating with management, even when so simple a thing as a tablet of salt and dextrose is the issue. However, as the reluctance to the use of salt tablets has been overcome, we have seen fewer and fewer cases of heat disease.

*(A) Courtesy McNeil Laboratories Inc., Philadelphia, Pennsylvania. (B) Tablets were re-assayed at end of clinical trial and found to have their original vitamin potency.

Interpretation of Results

IN ORDER properly to evaluate our results, then, we must appreciate that for the above reason alone, a continued decrease in cases was to be expected in 1944 (test season). In Table 2 are given data showing the expected number of cases based on previous trends and the observed number of cases, for each open hearth shop. None of the observed figures varied significantly from their expected values. Those men receiving supplementary vitamins showed no significant difference from the men receiving the control tablet.

TABLE 2.

Year	No. 1 O.H. Cases	No. 1 O.H. % of Total Plant	No. 2 O.H. Cases	No. 2 O.H. % of Total Plant	No. 3 O.H. Cases	No. 3 O.H. % of Total Plant	Total Plant Cases
1940–1943	102	15.4	39	5.9	35	5.3	662
	Cases Obs.	Cases Exp.	Cases Obs.	Cases Exp.	Cases Obs.	Cases Exp.	Cases Obs.
1944	4	5.8	2	2.2	1	2.0	38

Additional Study

AS AN additional check on this study, many of the men were interviewed to determine whether or not any favorable subjective signs could be elicited in behalf of the vitamins. Such a procedure, of course, leads to a high human error but we feel that there is much to be gained by interrogating the men during and following such an investigation. The men were questioned as to: how they felt; appetite; amount of fatigue as compared to the previous summer; resistance to heat; which tablets they preferred and why; etc. No difference could be found in the response to identical questioning of the men in the No. 1 open hearth as compared to No. 2 and No. 3 open hearths. Answers to all questions were similar in each of the open hearth groups. Answers were usually definite and apparently founded on considerable previous thought on the part of the men although they were not advised beforehand that they would be questioned.

The majority of the men were of the opinion that there had been less trouble from the heat with the newer tablets than with the old. Almost to a man, they all agreed that the workers were more willing to take the newer tablet. Most of the men stated they took more of the newer tablets than of the old and thought they could stand the heat better than when using the old tablets. There was, without contradiction, almost unanimous agreement that there was less gastric disturbance; the tablets were easier to take; and there was no bad taste, with the newer tablets. In all of these answers, though, the impressive thing was that men receiving vitamin B_1 or C or both were no more enthusiastc than those receving control tablets.

The men stated they had felt generally no better and had not had any change in appetite since using the new tablets whether in the vitamin groups or on heat tablets A.

Since heat tablets B and C showed no superiority to tablets A (control) it appears that the advantages observed by the men were due to the fact that the tablets were sugar coated.

From this study we are of the opinion that sugar coated tablets have advantages in heat disease prophylaxis, as they are better tolerated. It is necessary to use a "binder" in the manufacture of these tablets and they are not so readily absorbed.

By x-ray we have demonstrated that it requires from 40 minutes to three hours for this tablet to leave the stomach, and it appears to be "broken down" when it reaches the duodenum. During this period it does not cause nausea or distress.

By the same method, x-ray, we have observed the ordinary compressed salt tablet on the market, and the time element is about the same but in many instances it does cause distress, nausea and "heart burn."

The time element in both cases appears to be affected by the presence of food. Tablets remain longer in the stomach after a full meal.

There is one tablet on the market which dissolves quickly when taken (10 minutes) and is superior to the hard compressed tablet.

In the use of the sugar coated tablet it is necessary to educate the men to take the tablets when they start work and to repeat in about two hours.

At the present time we are working with enteric coated tablets.

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Industrial Nursing

THOUGH state departments of health and insurance companies have urged the employment of trained and experienced nurses, there is a wide variety in the background of those employed. In 1941, only 4% of industrial nurses had one or more years of public health training, considered essential in their preparation along with hospital training and first-aid methods. Industrial nurses who have this type of preparation should experience no difficulty after the war in remaining in this field; but the nurse who, just out of school, without special training or experience stepped into an industrial nursing job at a high salary because of the scarcity of nurses, may have to take the less desirable jobs or shift to another field if she does not complete her training. Because the industrial nurse needs special knowledge of workmen's compensation laws, accident prevention, plant sanitation, occupational diseases, and safety promotion and practices, special programs in industrial nursing for professional nurses have been offered recently. That there is need for more and better nursing service in industry is shown by the fact that many workers are not covered by nursing service and that few are covered at the rate recomemnded by the U. S. Public Health Service, e.g., one nurse to 300 workers; two or more to 600 workers; three or more to 1,000 workers. The needs for nursing service vary with the industry.

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Health Education

Industrial health as a subject has caused a great deal of speculation, surmise and guesswork, and has been the playground of statisticians for decades. The material written on it has been highly variable, from the uttermost claptrap in which the propaganda was composed mainly of wishful thinking, to real pearls of wisdom which have been of constructive use. Personal health and industrial health have been commonly associated, and rightly so; it is difficult to understand how an employee can be of value to his group continuously over a long period of time unless he has a fair amount of personal health. The great fallacy has been inherent in the fact, in spite of much advice on the subject from those who should know, that few really know how to live. Many are aware, from years of experience, what habits and practices make them distinctly uncomfortable, but even these often fail to carry out what they know to be the right thing to do. Personal health then, except in supervised children and probably adolescents in some instances, become largely a matter of whimsy (to say nothing of superstition and ignorance); personal health rules are transgressed continuously. Even with this pessimistic point of view, based upon actual experience and facts, the cause of industrial health is not a hopeless one. Much can be done in industrial groups to inculcate principles of right living and encouragement of the correction of abnormalities and minor defects before they become major problems. Then, too, the health supervision of adults in industry and commerce is not as difficult a problem as the application of the same principles in private life. The chief defect do not give enough consideration to the cardinal principle of health promotion. Most of the time, such programs are based upon medical and surgical services which almost entirely embrace curative practices. "Keeping well" is obviously different from "getting well," but that is usually the reason why most industrial health programs as such are not effective. Needless to say, one must secure the cooperation of employees from the top down; without such cooperation, all the best principles in the world will fail. But it is to be further emphasized that in the majority of instances basic health principles are not to be found in the so-called health programs in industry. Industrial health promotion essentially belongs to the medical department in industry, although it will not always be found there. Non-medical persons have taken an increasing interest in health subjects, both in industry and out, during the past 20 years. But for any large measure of success, the well-founded health program in industry should have its functions and outlets, as well as its responsibilities, placed in the medical department. For it is here that preventive principles can be applied, based upon the acquisition of knowledge through experience with curative methods. The industrial health program is then a direct outgrowth of the industrial medical and surgical department. This applies equally well to employees of commercial groups, which do no manufacturing, although some adaptations and modifications may, at times, be advisable. There is no formula for the successful administration of industrial health; but there are some basic fundamentals which are generally recognized, and which must be properly adapted and applied to the conditions and problems of each organizational unit.

Problems in Hand

For some time we have been remarking, editorially, on the need for (1) more and better educational facilities in industrial medicine, and (2) standards of industrial medical practice. It is heartening to all interested to be assured that the A.M.A. Council on Industrial Health has both matters in hand, and is carefully evolving the means and methods of their imminent improvement and ultimate general availability, as evidenced in the able and well written editorials in the Industrial Health number of *J.A.M.A.* (June 30, 1945). These speak for themselves so effectively that we reprint them herewith:

Industrial Medical Education

The Committee on Postwar Medical Services has been inquiring into the postwar intentions of medical officers in the Army and Navy. Out of over 20,000 questionnaires returned 4,215 officers indicated a desire for industrial medical practice, 863 of them full time. About one-third of this group wanted special preparation. The questionnaire did not determine specifically the desire of these men for long or short courses; the impression is clear that university courses are preferred over training in industry itself. According to a recent survey by the Council on Industrial Health, nine universities are prepared to supply advanced training in industrial health in schools either of medicine or of public health. Plans are maturing in a number of additional schools pending departmental organization, support or faculty assignments. These educational resources seem to be sufficient or susceptible of sufficient expansion to meet any immediate demand. The Council on Industrial Health and the Council on Medical Education are jointly examining the whole industrial medical education structure in the expectation that suitable recommendations can be made for orderly development. Full consideration will be given the details of undergraduate orientation, refresher and continuation courses, internships and residencies as well as fellowships or other long courses of a caliber similar to those demanded in other fields of graduate medical preparation for specialization. (*Continued on page 579.*)

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Industrial Health—Postwar

CURRENTLY the demand for health services in industry is greater than the medical and allied professions are prepared to meet. Will this interest maintain itself after the stimulation of war production is over? Reconversion has already curtailed medical activity in a few war plants; on the whole, however, optimism is warranted as to the postwar course of industrial medicine. Certainly governmental agencies, committed to capacity peacetime employment and production, are not likely to moderate present activity in industrial hygiene or workmen's compensation. At the moment proposals are under consideration to expand industrial hygiene services in both Federal and state health agencies to a considerable degree, through earmarked allotments in the budget of the U. S. Public Health Service. Furthermore, legislation now under consideration would make available to all Federal employees occupational health services similar to those furnished by private industry. Extension into the states and municipalities will provide service to millions of government wage earners. Labor is more and more alive to its own responsibilities for health conservation and education. Safe and healthful working conditions are unquestionably here to stay as factors in collective bargaining. Management, through its national organizations and trade associations, has recognized the objectives of industrial health and is actively advocating their widespread adoption. Medicine has accepted greater individual and collective responsibility for industrial health service than ever before. Observers of industrial medical activity note its uneven distribution. Medicine and industry have not developed a formula which presents the benefits of industrial health service convincingly enough to attract full support from the great majority of small plant owners. Past demonstrations have shown that such services can be furnished within the means of almost any employer by using various combinations of part time service of physicians and nurses. One especially promising experiment is taking place in the Fort Greene District of Brooklyn, where the county medical society and the local health agency have joined forces with employers, labor and social agencies to promote a plan of health education sponsored by plant labor-management health committees. On this foundation the larger superstructure of a plant medical service can be built. In nearby Astoria, nursing and industrial hygiene services are supplied to small industry provided the plant employs a physician and complies with other requirements which include proper medical supervision and adequate record keeping. In time the employer will no doubt assume full support of the project. Special medical services of various kinds will probably be introduced rapidly in the postwar period. There are few independent consultants in industrial hygiene, sanitation or ventilation. Clinical pathologists who have some acquaintance with toxicology could well expand their professional horizons to provide consultation service to industry. Psychiatrists working with clinical psychologists may contribute greatly to those aspects of human relations and behavior which have proved troublesome in our industrial civilization. Serious consideration, in fact, has already been given to the development of industrial medical clinics. They will provide conventional industrial procedure plus a diagnostic service which will supplement and make more effective the efforts of the worker's personal physician in the field of non-industrial disorders. Much interest is apparent by management and by labor regarding the extension of industrial medical services to include ordinary illness. Many variations in approach have been developed by such diverse industries as mining, shoe manufacturing, refining, ship construction and transportation. The Council on Industrial Health has taken the position that the principles on which medical care should be based have been defined by the House of Delegates of the American Medical Association. If medical care plans are in prospect, industry should be in agreement with the appropriate medical societies as to conformity of such plans with these established principles. Since these plans are essentially medical, the Council feels that policies should be directed and controlled by medical departments in industry.

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Low Back Pain

—Treatment by Nerve Block—

LYDIA SHAPIRO, M.D.,
Fort Wayne, Indiana

DURING a study of coccygodynia, in which low back pain was associated, it was discovered that in the process of diagnosis, in which novocaine injections were used, the pain in the back disappeared. The injections were made in various locations, but usually it was found that the transacral block of the first three sacral nerves, separately or in combination, relieved the backache, and very frequently also the coccygeal pain. Because of this marked relief with these injections, a study was made of low back pain.

Low back pain is among the most common complaints of the woman worker. It is so common and persistent that both the patient and doctor consider it a constant nuisance and do very little, if anything at all, about it. The most prevalent type of backache occurring in these patients is that in which persistent subjective complaints are rarely substantiated by corresponding physical or x-ray findings. The complaints are characterized by spontaneous remissions and exacerbations, the latter being more or less relieved by strapping or physiotherapy. In nearly all of these patients, neither the physical nor x-ray examination revealed any gross abnormality of the spine or sacro-iliac region. The occasional lippings or frank osteoarthritic changes noted on the x-ray of the lower spine and sacro-iliac synchondrosis can account for the pain, although such changes may also be considered as physiological for the age in which we found them.

On deep palpation of the back, areas of tenderness are encountered, the upper limit of these areas extending to the posterior superior iliac spine and the middle of the crest, and the lower limit reaching down to the greater sciatic notch. From these points there extends an area of hyperesthesia and hyperalgesia, usually over the lateral surface of the buttock and the hip. Many presented positive Lasegue and Patrick signs, which were not always constant in the same patient, indicating the remittent nature of this condition. On passive extension of the hips, a click was occasionally heard, localized about the sacro-iliac region. This click was also noted at times by the patient, but in some patients passive extension was limited because of back pain on the involved side. There was no apparent free motion revealed in the sacro-iliac or pubic joints. Prevailing general obesity, a pendulous abdomen, and a waddling gait are further characteristics of the physical picture.

The diagnosis is usually made of sacro-iliac "derangement," a term which embraces many traumatic or osteoarthritic changes in this region. In such cases, as in all conditions with an obscure pathology, a careful detailed history is essential. Ofter, however, this is difficult to obtain because the average patient does not possess the ability correctly to evaluate an erroneous impresison. It is not an exaggeration to state that the physician often complicates matters by trying to obtain a history of an accident, fall or other trauma to her back, but fails to ask her of the general daily routine at the time of, and for several days preceding the onset of her symptoms. The male physician, to whom the average routine of work is a giant question mark, fails to appreciate the real pathogenesis of his patient. Hunting for an "elephant," he fails to catch those important annoying "mosquitoes" in the female history such as the various types of housework. Likewise he often overlooks altogether the background of housework and family duties before industrial em-

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ployment was begun, or concurrent with it while it is being carried on. On the other hand, the patients being used to everyday work, like to the beloved drink of milk of magnesia, do not bring out these facts by themselves. When asked whether there was any accident preceding the onset of pains, many of them answer sincerely and convincingly, "No, I was working as usual all day yesterday, and this morning I could not get up." There may be other answers, such as from one patient that she did not do any work because of the shopping day, during which it appears, however, that she alone brought home more bargains than three people should carry—as to which she is sure that she did not have much difficulty bringing them home and that only in the night did she experience marked pains in her back. In general, all give a typical history of having done hard housework for many years, not only without adequate intervals of rest, but also during pregnancy, post-partum, or menstrual periods, thereby putting an especially undue strain on the physiologically relaxed and weakened pelvic and sacro-iliac ligaments. The predominating type of work done by these women was lifting their children and carriages, carrying heavy bundles during shopping trips, washing clothes, and cleaning floors, furniture and windows. (This should be noted in connection with the industrial history.) Accompanying the generalized obesity and flabbiness of advancing years, there is a subsequent loss of elasticity of the muscles and ligaments of the pelvic girdle, the latter in general being apparently the "locus minoris resistentii" in the woman because of the physiological situations mentioned above (pregnancy, etc.). The constant strain, without adequate physical rest, and the loss of elasticity permit the overstretching and traumatization of the extra and intra-articular ligaments of the sacro-iliac synchondrosis (probably including slipping of its articular irregularities), resulting in sprains and strains following minimal trauma. The patient usually refers the initial onset of her complaints to trivial stresses, entirely ignoring the constant trauma incident to her housework during the years.

The usual routine treatment having been found inadequate, it was decided to employ novocaine injections, directly to the "would be" site of the lesion, which, on the basis of the above-mentioned empirical conception of the pathology, we considered to be located in the sacro-iliac synchrondosis and its associated fascial, ligamentous and articular structures. Inasmuch as the first and second sacral nerves innervate the latter region, we employed transacral block of these two nerves with two purposes in mind: (1) to allocate the pathology (Steindler) and so to verify the diagnosis; and (2) to use it therapeutically for symptomatic relief. As this procedure gave immediate relief in many patients, we accepted it as evidence that this was the site of the pathology of the backbone. In some cases in which the tenderness was nearer to the lower limit of the area previously described, or in the mid-sacral region, we employed transacral block of the third sacral nerve. The relief obtained by the blocking of the latter nerve is in accord with our diagnosis as to the location of the pathology, inasmuch as the proper sacral structures, being innervated by this nerve, are so intimately blended with those of the sacro-iliac joint.

It was found that, after the treatment with the nerve block, there was not only a disappearance of the localized areas of tenderness and hyperalgesia, but also a loss of other associated symptoms. We must admit that in some patients we did not succeed in locating the foramina, and such cases were injected locally

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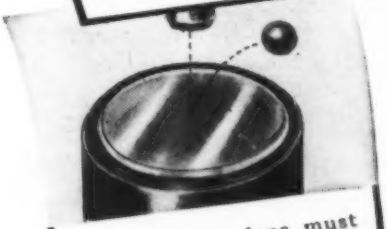

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about the sacro-iliac joint as deep as the spinal needle would go without resistance. The novocaine (20 cc.) was distributed slowly and gradually, beginning about the superior posterior spine and the insertion of the iliolumbar ligaments, and ending at the lower end of the sacro-iliac joint, the latter region having been found in many of our patients. The patients with tenderness in the midsacral region and at the end of the sacro-iliac joint were often revealing tenderness of the sacrosciatic ligaments (on rectal or vaginal examination). The area of cutaneous hyperalgesia in these patients overlapped the painful landmarks given by Steindler, approximately corresponding to the insertion of the above mentioned ligaments, the role of which is a very important one in maintaining the position of the sacrum during normal and forced motion in its transverse axis. To combat tenderness of this area, a transacral block of the third sacral nerve was used, or a deep local infiltration with novocaine solution in the circumference of the third and fourth foramina.

It is of utmost importance that strict asepsis be maintained, that the anatomy of the lower back be studied thoroughly before the nerve block is to be employed, and that the technique of the nerve block be performed thoroughly and carefully, always keeping in mind: "none nocere."

As a result of these precautions, no complications of any kind followed any injection. In two patients out of 27 there was a recurrence in a few months following the treatment, but they were again relieved by a much shorter series of treatment than during the first attack.

It has been noted by many authors that irritated joints may eventually show osteoarthritic changes, and it is probable that the pain which these patients previously experienced in the back was not due to an osteoarthritis, but rather to other inflammatory changes (accompanying it and probably resulting in its appearance). In fact, although at times there was a flare-up of their generalized osteoarthritic symptoms, their previous low back pains were conspicuously absent, even in the presence of definite x-ray changes, as illustrated by four patients who returned complaining of generalized joint pain, but without any back symptoms.

Summary and Discussion

BASED on the hypothesis that novocaine injections to disturbed structures have the effect of inducing partial rest with return to their normal condition with consequent normal dynamic balance (by breaking up adhesions and relief of undue pressure), a technique of treatment by these injections in the area of innervation was used to produce this effect. The relief of these injections was probably influenced to a great extent by the reduction in the number of painful stimuli transmitted from the pathological site and interference with the summation of stimuli, which is characteristic of prolonged painful states.

For this purpose, transacral block of the first three sacral nerves was chiefly used. The local infiltration with novocaine solution (1%), as above, was also very beneficial.

Because of the marked relief obtained by these women, and their return to useful work after years of incapacitation, we feel that the few risks attendant on the use of novocaine were well compensated.

There must be kept in mind the possible anatomical variations of the spinal nerves, and the variations in the nerve supply to the muscle and skin. Under these circumstances, it is obvious that it is impossible to indicate with strict accuracy the nerve supply to the

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sacro-iliac region, and, therefore, if immediate relief is not obtained following the first injection, it should not discourage one from repeating and modifying the treatment, several times if necessary. Usually four series of injections resulted in complete relief of symptoms, but occasionally a few more were needed in a few patients.

Nevertheless, before undertaking a hasty surgical intervention because of the occasional findings in this type of patient of an absent ankle reflex in combination with a doubtful x-ray picture, a nerve block trial is worth while.

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Occupational Disease Liabilities

B. E. KUECHLE,
Vice-President and Claim Manager,
Employers Mutual Liability Insurance Company,
Wausau, Wisconsin

WHILE practically complete occupational disease coverage is only a few years old in Illinois, the present law does approach complete protection. This is true also in the neighboring states of Indiana and Michigan. In Wisconsin, however, the law dates back to 1919 and not only grants benefits for all occupational diseases, but also for all non-accidental injuries due to employment.

No discussion of either the financial or economic aspects of the occupational disease problem can be attempted without a full consideration of the humanitarian approach; neither can the humanitarian aspect be explored without considering the economic background.

When laws were first proposed in the various states, substituting present compensation systems for common law procedure in indemnifying employees and dependents for accidental injuries, much opposition developed on the part of industry. It was alleged that such laws would ruin industry because of the increased cost of insurance coverage. Particularly strong were such arguments where competitive states did not have or propose similar legislation. True, insurance costs for coverage under the new laws did increase many times over the premium charges for employer's liability insurance where the employer retained his common-law defenses. In Wisconsin, insurance companies actually increased insurance rates under the new 1911 compensation law 400% over the rates used for employer's liability protection prior to the enactment of the law. In other words, an employer who, prior to September 1, 1911, paid an annual premium of $1,000

Presented May 24, 1945, before the Industrial Hygiene Session of the Greater Chicago Safety Conference, Chicago.

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for employer's liability protection was required, if he elected to become subject to the new Wisconsin Compensation Law, to pay a premium of $4,000.

However, compensation premiums alone represent only a small part of the economic loss occasioned by our industrial accidents. The fourth Biennial Bulletin of the Minnesota Compensation Insurance Board is authority for the statement that, when the industrial accident picture is viewed in its entirety, indirect losses caused by these accidents, such as increased labor turnover, damaged machinery, damaged materials and products, slow-downs, decreased efficiency, and other consequential items aggregate four times more than compensation insurance costs.

In 1909 the Wisconsin Legislature appointed an interim committee to study compensation systems and prepare a bill to be introduced in 1911. This committee in submitting its bill in 1911 appended a special report giving four important reasons for recommending the enactment of a compensation law. The most important reason cited was not, as might be assumed, a reference to benefits to employees and dependents following accidents, but, and I quote, "to provide a means of minimizing the number of accidents in industrial pursuits." In amplifying this statement, the committee continued, and again I quote, "In this connection it is reasonable to expect that where compensation must be paid for every injury, employers will endeavor to reduce the number of accidents for the practical reason that fewer accidents must necessarily reduce the amount of compensation paid."

Let's see how nearly accurate this prophecy of the committee has turned out to be. Almost every two years since 1911, the Wisconsin Compensation Law has been liberalized by legislative amendments. Benefits under the present law are computed by actuaries to be a trifle over 100% greater than they were in the law as passed in 1911. During that same period, compensation insurance rates have been increased not in excess of 25%. Do not assume that this rather nominal increase in insurance costs has been due entirely to the prevention of accidents and diseases in industry. Wage levels have risen considerably since 1911 and any increase in wage levels above the maximum wage on which compensation is based naturally affects insurance costs favorably. However, no one will question the assertion that in the main, the splendid work done in accident and disease prevention is largely responsible for this favorable development of large increased benefits with a comparatively small increase in cost.

The District of Columbia and all states except Mississippi now have compensation laws covering accidental injuries. To my knowledge, there has not been a single instance where legislation was introduced to provide for a return to the former common law procedure. Frankly, it seems unreasonable to assume that industry would care to return to the former system despite its lower insurance costs.

If there is any justification for compensation (regardless of fault) in the case of accidental injuries, then such justification should apply even more forcibly to a compensation system for occupational diseases. Few accidents occur where the worker is not partly at fault and where avoidance of the accident doesn't rest in a considerable degree within the control of the employee. However, with occupational diseases, the picture is vastly different. The employee can do little to avoid the onset of an occupational disease because usually he is unaware of the hazard. Many times even the employer dealing with new chemicals or new combinations of chemicals is unaware of potential hazards to the health of his workers.

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Also, from the standpoint of costs, the benefits paid for occupational diseases represent only a small fraction of the total benefits paid under the laws. According to the latest statistical release of the Industrial Commission of Wisconsin, only 5.5% of all cases settled in 1943 and 3.4% of all benefits paid were chargeable to occupational diseases and all other non-accidental injuries. The percentage has been comparatively uniform since 1940. During that year 3.4% of all cases settled were in the occupational disease group; in 1941, 3.4%; in 1942, 4.1%; in 1943, 5.5%. While the figures haven't been released officially as yet, a letter from the Commission indicates that during 1944, 5.4% of the cases settled were in this group. Costs, likewise, have been comparatively uniform. In 1940, 3.2% of the benefits paid were chargeable to occupational disease claims; in 1941, 4.5%; in 1942, 3.9%; in 1943, 3.4%. No statistics are available for 1944.

It must be remembered, however, that these figures represent over-all state costs. Many industries and occupations have no disease hazards, while others have disease hazards which are considerably more costly than the hazards of accidental injuries.

However, that same picture is present in comparative hazards of accidental injuries in certain industries and occupations. These hazards are measured by insurance rates. For example, in Illinois, the manual classification "Clerical Office Employees" carries a rate of six cents per $100 of payroll. "Structural Steel Erection," on the other hand, carries a rate of $8.81 per $100 of payroll.

Why then, with such small costs and so few claims involved, do we find opposition in certain states to an adequate occupational diseases law? Why should insurance companies be accused, as they so frequently are, of leading this opposition? The liberality of compensation laws is of no financial concern to carriers. They merely assume the liability of the employer as determined by the legislatures and the rates are based on state-wide experience which is anticipated when new legislation becomes effective. Thereafter the rates are adjusted annually on the basis of actual experience.

It is almost certain that, when the employer starts paying the bill, measures similar to those taken to prevent accidental injuries when these only were compensated for, will be taken to prevent occupational diseases and improve industrial health. Experience has already indicated that that is precisely what occurs as these laws become effective. Does anyone doubt for one moment that silica exposures have been reduced to safe tolerances largely because silicosis was becoming a costly item in trades having a silica hazard?

Even though silicosis was made compensable in Wisconsin in 1919, it wasn't until the full impact of depression on employment in 1932 resulted in an avalanche of silicosis claims. Little was known then of the disease or of the best preventive means. Insurance rates jumped from 1.083% of the 1911 figure in 1930 to 1.563 in 1934 and 1935. Then when the hysteria abated somewhat and preventive means produced results, state-wide rates dropped again to 1.276% in 1940. Nevertheless, rates in certain classifications were more than tenfold higher in 1934 and 1935 than they had been in 1930 and before.

In 1943 non-accidental injury claims, which include occupational disease cases, cost Wisconsin industry only $203,230, or 3.4% of the entire benefits paid under the compensation law. Of this total, silicosis claims cost only $30,199, or 0.5%, although it represented 14.9% of the cost of all occupational diseases. However, in 1940, this latter figure was 61.9%; in 1941, 39.2%; and in 1943, 54.7%.

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In September, 1943, occupational diseases were covered by 32 compensation acts, including Federal and territorial legislation, but of these acts, 12 covered only diseases mentioned in a list or schedule, and in several of these the list was meager and rudimentary. In other words, on the basis of the Wisconsin experience, which is rather closely substantiated in some other states, a full coverage act would not increase the cost to industry to anywhere near the same extent the cost will be increased in those remaining states which now do not cover diseases at all except insofar as they may be classified as accidental injuries.

There can be no doubt that the control of occupational diseases, whether compensated or not, has improved the standard of industrial health on a national basis during these last few years.

It has been estimated that lost time in industry from general illness, not attributable to employment, is 15 times as great as the loss caused by industrial accidents and diseases.* DR. C. O. SAPPINGTON, addressing the American Conference on Industrial Health in 1940, said that the average employee lost seven days per year due to sickness, for an aggregate wage loss of $1,120,000,000. When disbursements for medical and nursing care and hospital bills, plus the cost of losses due to labor turnover, idle machines, and other items are added, our total economic loss due to ill health aggregates $10,000,000,000 per year.

It takes very little imagination to see that only a small improvement in industrial health standards due to control of occupational diseases would more than offset the increased cost to industry of compensation premiums due to the addition of full coverage occupational disease provisions to present compensation laws.

The basis for the present opposition to extending the laws to include compensation for diseases is the fear that through loose administration, these laws will be interpreted to offer complete social insurance against all sickness and old age infirmities at industry's expense. Able administrators recognize this trend. In discussing this danger, Chief Justice of Ontario, Sir William Meredith, said, "Everything depends on the constitution of the Board; if it is a bad Board, the whole thing will be a failure." H. A. Nelson, director of compensation of the Wisconsin Commission, recognizing this same danger said, "Adminstrators must, first of all, be capable and then must study and inform themselves fully upon the subject before them if they are to be competent for their task. They must combine at least a fair knowledge of the elements of law, insurance, medicine, and of specific compensation provisions."

It is a serious indictment of the administration of compensation laws that their extension should be retarded through the ill-considered decisions of the very individuals who should be most interested in broader coverage. Even increased benefits for accidental injuries are being denied by legislatures because of the mounting costs. These costs are due in a great measure, not to such liberality as was contemplated in these laws, but to the trend in administration of granting awards for disabilities not even remotely associated with trauma. Such procedure adversely affects those claimants with legitimate compensable injuries.

Too many physicians lend themselves to similar trends by trying to establish a relationship between employment and the common, every-day diseases of life and the degenerative manifestations of old age, never realizing that an unjust award, while favorable

*DR. PAUL A. NEAL:—INDUSTRIAL MEDICINE, 9:12, 622, December, 1940.

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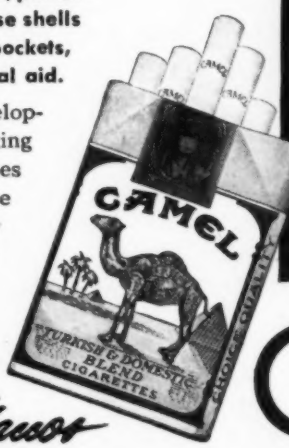

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to a single claimant, adversely affects the more liberal treatment of the many.

Organized labor also handicaps the extension of occupational disease legislation through its opposition to those control measures which are absolutely essential in keeping health standards on a high level. It is an accepted fact today that, with few exceptions, no man should be denied employment because of handicaps or infirmities. However, such individuals must be properly placed after a thorough appraisal of their disabilities. With pre-placement and follow-up physical examinations under a plan such as that drafted by the Council on Industrial Health of the American Medical Association where the rights of labor are recognized and protected, accidents will be prevented and occupational diseases controlled.

If these adverse influences are recognized by everyone, direct costs of benefits will be kept to such a minimum that laws can be liberalized for accidents and made all inclusive for diseases. The resultant economic saving in lowered production costs will more than offset the costs of increased benefits.

Let's remember that the cornerstone of our economy is the worker. His well-being is the well-being of the nation.

The Sensitized Skin

—Experimental and Clinical Implications—

MAX GROLNICK, M.D.,
Brooklyn, New York

IT IS the intention of the writer to point out certain experimental data which will help the physician engaged in industrial practice to interpret his own clinical findings. The term *sensitized skin* will be used within the strict confines of the term allergy, namely *a specifically altered capacity to react*, introduced by *previous exposure* to a potent excitant, and *reproduced* by subsequent exposure to the *same* or a *closely related excitant*. The clinical entity of interest to this group is known variously as occupational dermatitis, dermatitis venenata, contact dermatitis, eczema, and eczematous dermatitis.

Let me present a practical illustration, the patient whose findings led to the experiments in contact allergy which have been carried on by the writer during the past eight years. The patient presented a vesicular dermatitis surrounding the anal region. He had been using for several days a proprietary ointment for the treatment of a thrombosed hemorrhoid. About one week later a severe dermatitis involved the area to which the ointment had been applied. Positive reactions to the "pile" ointment and to several of its ingredients were present on removal of the 24-hour patch-tests. Obviously he had become sensitized to several of the constituents in the ointment, the period during which this process took place being some 12 or 13 days. This, in the light of the data to be presented, is the *incubationary period*. Not only was there local sensitivity, i.e., at the site of the dermatitis, but there had also been produced a general cutaneous sensitivity, as was evidenced by a positive patch test at a distant site, namely, on the arm of the patient. Only several hours were needed to reproduce this test reaction, for on removal of the patch-test at the end of 24 hours a fully developed vesicular dermatitis was present. This interval of 24 hours or less is the *reaction period*, which is to be distinguished from the incubationary period mentioned above. It might also be pointed out that the eruption described above had remained localized, but, had the local protective barriers been ex-

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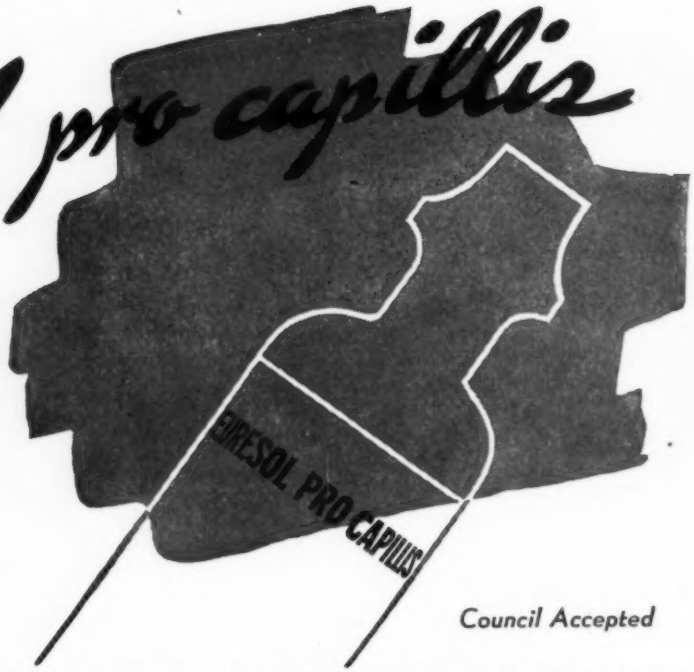

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TABLE I.
INCUBATION PERIOD. SUBJECTS SENSITIZED BY ONE APPLICATION OF KRAMERIA

CASE NO.	WEEK I							WEEK II						WEEK III							WEEK IV	WEEK V
	Day																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	29
1	A							−							+						(+		++
2	A							−		(+)					+							++	
3	A							−			(+)				+								
4	A							−							−				(+)			+	
5	A	A						−				(+)			+++								
6	A	A						−			(+)				++								
7	A	A	A					−			(+)				+++								
8	A	A	A	A	A	A	A	−			(+)				++								
9	A	A	A	A	A	A	A	−						(+)	+								
10	A	A	A	A	A	A	A	−		(+)					+++								

A = days of exposure to original application. + or − = writer's readings. (+) = patient's readings. +, ++, +++ = mild, moderate, or marked reactions.

ceeded because of a marked degree of sensitivity, a generalized eruption might have ensued. This would have been referred to as a *constitutional spread*. Experimentally such episodes are encountered.

And now more particularly what are some of the experimental data alluded to above. One of the ingredients of the ointment previously referred to is the fluid extract of the South American plant Krameria. Several drops of this substance were applied as patch tests to the arm of normal subjects for periods of one to several days. Following removal of the patches the sites were watched for a few weeks. It was then found that some subjects developed a typical vesicular dermatitis at the site to which the test had been applied, at the end of an interval of from eight to 21 days, during which time the skin had remained grossly clear (Table I). 1* This period is regarded as the incubationary period for inducing sensitivity to Krameria. It compares favorably with that established by investigators for other sensitizing substances e.g., eight to 24 days for dinitrochlorbenzene;[2] 14 to 16 days for primrose;[3] six to 14 days for butesin pictrate.[4] The findings thus noted led us to the obvious clinical fact that the mere percutaneous or external application of a very small amount of a *potent sensitizing substance* to the intact skin can sensitize the entire skin surface of some individuals after an incubation period of approximately one to three weeks.

Of course only a small number of subjects were sensitized by a single application of the excitant. In others, from two to eight applications at adjacent sites had to be made before sensitivity was induced. Thus in one group of 37 subjects, 86.3% were sensitized, whereas in 13.7% sensitivity could not be induced by as many as 10 successive applications with the excitant, using the same technique (Table II).

This again leads us to an important clinical analogue, namely that repeated local applications of small amounts of a *potent excitant* can sensitize the *entire skin* surface of a fairly high percentage of the normal population. A very small proportion of persons probably cannot be sensitized by any sensitizing substance. The figure of incidence of sensitization of 86.3% compares with those of investigators who employed other excitants, namely 41.6% for primula in one group and 100% in another (Block & Steiner—Wourlisch); 70%

TABLE II.
ACTIVE SENSITIZATION WITH KRAMERIA

Number of subjects studied		37
Number in whom sensitivity was induced		32 (86.3%)
After one application	1	
After two applications	11	
After three applications	9	
After four applications	3	
After five applications	3	
After seven applications	1	
After eight applications	1	
Number remaining unsensitized after seven to 10 applications		5 (13.7%)

*For a more detailed description of these experiments, and a discussion of the findings, the reader is referred to the original articles noted in the References.

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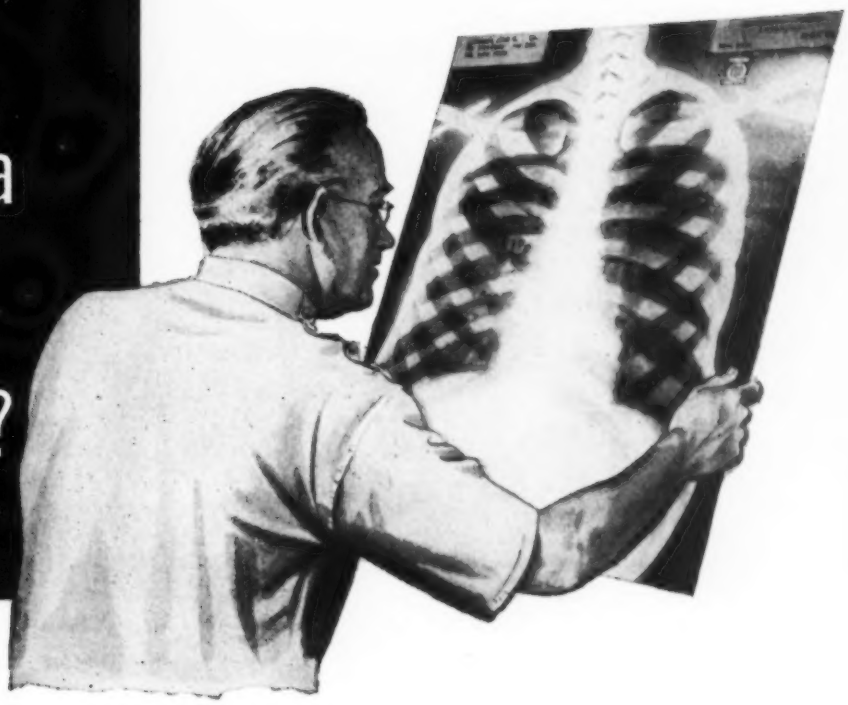

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It would now seem fair to state that, except for certain experimental limitations, what happens in the production of occupational dermatitis parallels the findings in the experiments briefly described above. Thus, repeated increments of exposure of potent sensitizing substances can actively induce sensitivity in a person who was previously not allergic to the same or related substances. Fortunately not too many such sensitizers are in use in industry, and not all subjects can be sensitized under the circumstances under which they are exposed in the occupations. In addition industry has been taking such precautions as local protective coverings, proper cleansing, the substitution of less active sensitizing chemicals where possible, and other measures.

Other available experimental data referring to the same problem cannot be presented at this point, owing to the limitation of time. For a more detailed analysis of this information the reader is referred to the original text.[6] But from this evidence and from that previously mentioned it is possible to draw the following lessons. It is well to bear in mind *when doing patch tests* as a *diagnostic procedure* that some active excitants in sufficiently high concentration, may induce sensitization even with a 24 or 48 hour contact. Also, the not uncommon practice of repeating diagnostic patch tests with the same allergens, when reactions are negative or doubtful, should be discouraged. It seems not improbable that the repetition of diagnostic patch tests by one or several clinicians with the same or related substances may actively sensitize the patient to one or several of the substances being applied in the tests.

Though the writer would have preferred to continue at greater length on this general subject with a discussion of factors concerned in the spread of sensitivity, the nature of the substances causing sensitization, the pathology of the skin, etc., it is felt that the remaining space might better be devoted to stressing briefly some of the important clinical features of sensitivity of the skin produced by the application of adhesive plaster, a subject with which the reader has had considerable experience.[7]

The expression dermatitis due to adhesive plaster has been rather loosely used in recent years, and the impression has been left that many cases of irritation of the skin from the use of adhesive plaster are allergic in character. When a fairly large area of the skin is covered and put under tension by a relatively impermeable foreign membrane certain changes take place. Sweat and oil secretions of the skin are retained; there is maceration of cells by friction; there may be superficial infection; skin capillaries are traumatized; chemical changes in the skin take place; and, no doubt, other changes ensue. It is little wonder then that many persons exhibit varying degrees of irritation following removal of adhesive plaster.

On the other hand, there is a small group of persons, probably less than one in 200, who are actually sensitive to adhesive tape in the strict allergic sense. In these persons the application of adhesive plaster for 24 hours or less produces a reaction localized to the site of contact. It is characterized by intense erythema, edema, and tiny or large vesicles. At times the reaction may spread beyond the limits of contact. During the first few days after removal of the plaster the reaction usually becomes more intensified. This is in contrast to what occurs when there is irritation based on non-

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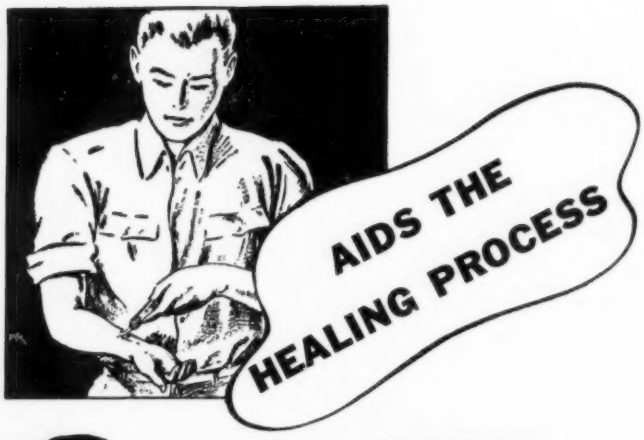

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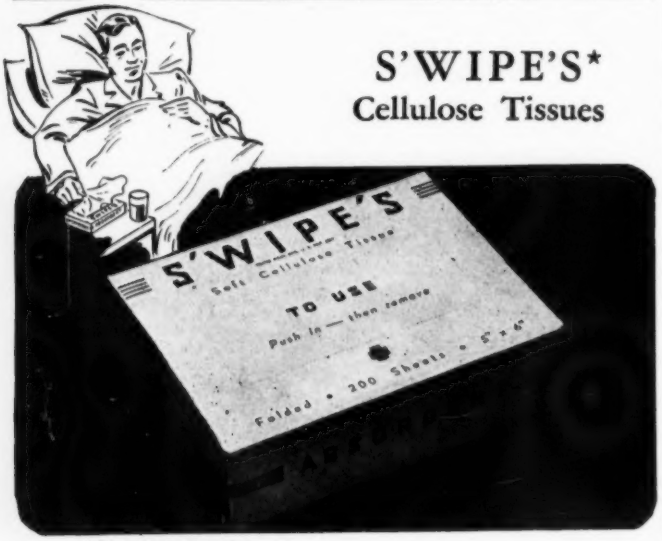

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specific factors previously enumerated. Furthermore, when these subjects are tested with the known ingredients in adhesive plaster mass, positive reactions are obtained to rosin and rubber, and possibly others. The patient sensitive to adhesive plaster frequently gives a history of a previous occurrence of contact dermatitis due to other substances. Thus the aforementioned criteria must be considered before a rightful diagnosis of allergic dermatitis from adhesive plaster can be made.

Summary

THE production of sensitivity of the skin by contact with potent sensitizing chemicals closely parallels the findings obtained in experimental studies in this field. In interpreting both clinical and experimental findings it is necessary to clearly define several descriptive terms. The *incubationary period* refers to that interval which elapses between the initial contact with a potent sensitizing substance and the first appearance of sensitivity (flare-up reaction). It is usually from seven to 21 days. The *reaction period*, on the other hand, refers to the interval required to elicit a positive patch test reaction in an already sensitized subject. It is usually 24 hours or less.

It should be borne in mind that the mere external application of a very small amount of a potent and concentrated sensitizing substance to the intact skin may at times sensitize the entire skin surface following a suitable incubationary period. It is well also to consider the possibility of inducing sensitivity by repeating diagnostic patch tests with the same or related substances which are potential sensitizers.

As regards irritation of the skin due to the application of adhesive plaster, non-specific factors such as friction, chemical changes, retention of secretions, etc., play a role in most instances. True allergic sensitivity to adhesive plaster is not common, the incidence probably being one in several hundred.

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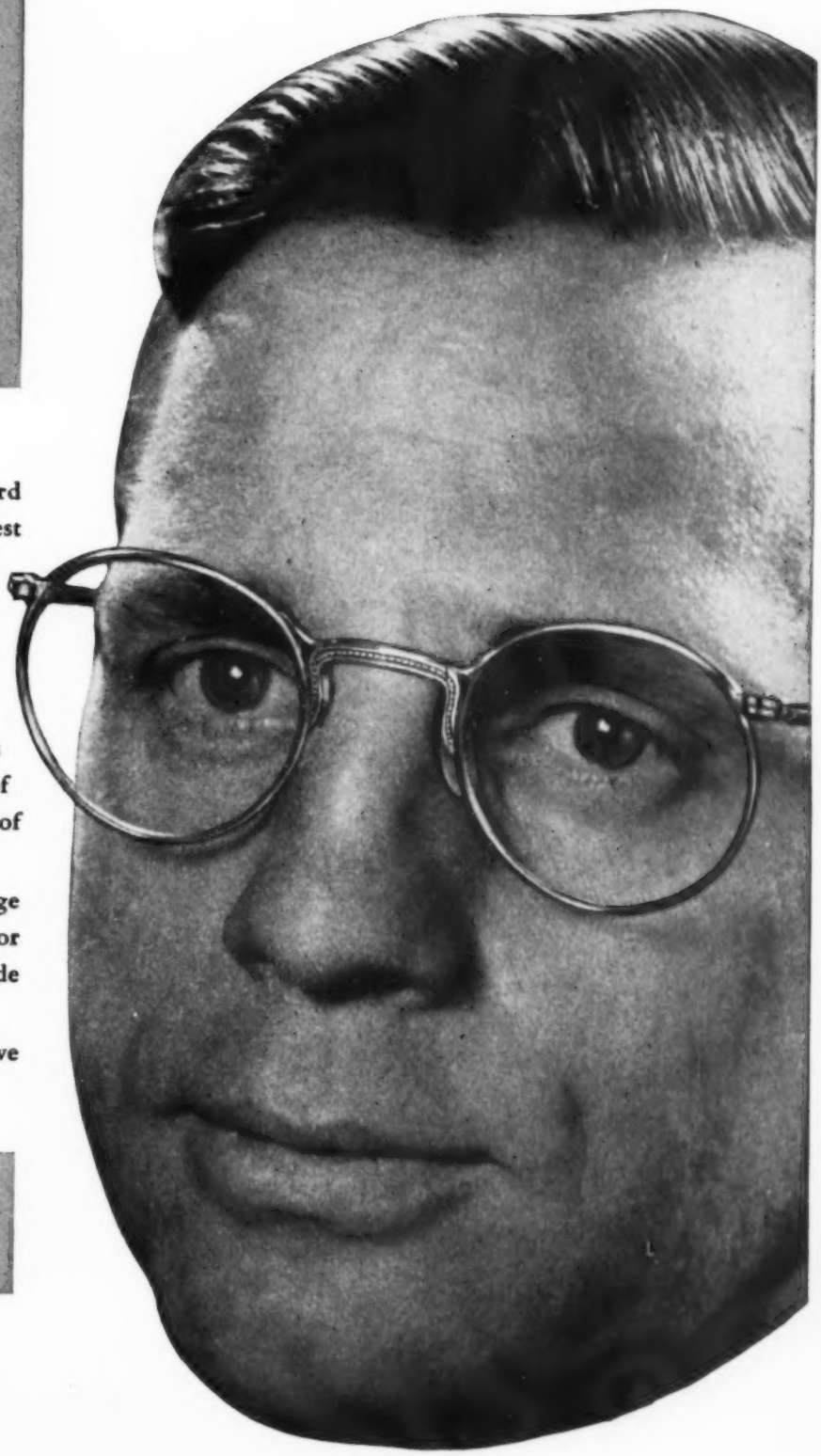

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"The gratifying increase in American life expectancy is due almost entirely to medical discoveries, to progress in sanitary engineering, and to other public health measures enforced on us by the law with police powers. For these oft-quoted improvements the average citizen deserves no credit. Were his water supply not foolproof he would still die of typhoid. Were vaccination not forced on him he would still be ravaged by smallpox. The death rate due to accident has not changed in 30 years. Cancer whose control at present requires early diagnosis will continue to rise if we cannot be educated to consult a physician on our own. Without a constitutional amendment to require chest x-rays or to prevent burning the nutritional candle at both ends tuberculosis control is handicapped. The 10% syphilis 'shadow on the land' grows rapidly to over half length in the early forenoon of life and since there can be no law against exposure it will continue to contribute its share to the mounting number of heart fatalities. One-half of our hospital beds are filled with mental cases. Their number continues to rise as the growing mind is muddled by irrationality, scarred in emotional accidents, and singed by well-meaning, though misguided amateur parents and educators."

And then he emphasizes "The greatest remaining frontier in American health is that of health education. Until we can teach people to enjoy health habits that are good for themselves and their fellows we stand helpless on this front." Much of our malnutrition is not due to poverty but due to "lack of understanding of child management and the attendant faulty eating habits." Then he says, "Accidents would be reduced . . . 20% if man could be happy without alcohol. He who persuades 100 heavy smokers to quit before age 30 may credit himself by this one act of education with saving the lives of 20 men in the following 30 years. 37% of deaths among heavy smokers could thus be postponed until after the age of 60." This is a strong statement, and evidently is based on the amazing statistics gathered by Dr. Pearl in the study of non-smokers, light smokers and heavy smokers. Then he goes on to say:

"How can the forces of health education rise to this stupendous task of making man's health habits the kind that will save him from destroying himself? The following principles and practices seem appropriate.

1. The periodic physical examination must become a part of our pattern of life. The health education program for individuals and classes should be conceived in part as a follow-up on the examination and its success measured in terms of health improvement.

2. The most potent 'health education' today comes from dawn to midnight by radio and newsprint, not in the second hour on Tuesday and Thursday. New efforts must be made to purify this source." *Editor's note: This probably refers to the soothing radio voice which promises perfect health and happiness by taking one of this, that or the other thing—"Not too weak—not too strong—but just right," etc., etc.)* "Simultaneously teachers may profit by studying the sales methods whose persistence in high-priced advertising time and space proves their effectiveness.

3. Health instruction must be scientifically based, essential, straightforward, well-timed, and well-placed. This means textbooks written by persons who are at home both in the research literature of their subject and the thought processes and life habits of their readers. This means, for instance, sex education and preparation for marriage in high school" *(we will recommend the McKinley High School booklet, Facing Life)* "and early college, while cancer and thrombosis wait awhile. This means that the athletic field, the locker room, the home, and the community are searched for 'teachable moments' and cooperation. This means starting a better tooth diet for the next generation in the pregnant mothers of today and tomorrow.

4. The student should begin now to use the board of health, the neighborhood dentist and physician, the local clinic, and other community health agencies with whom he will live the remainder of his life.

5. We must find new ways of associating pleasant emotions with wise health conduct and unpleasant ones with the wrong way. This is difficult when the injurious effect of a health practice is far removed in time from its cause which is surrounded with

From *Plantation Health* (9:2, 14-16, April, 1945), published by Hawaiian Sugar Planters Association; Editors, P. H. LILJESTRAND, M.D., and NILS P. LARSEN, M.D.

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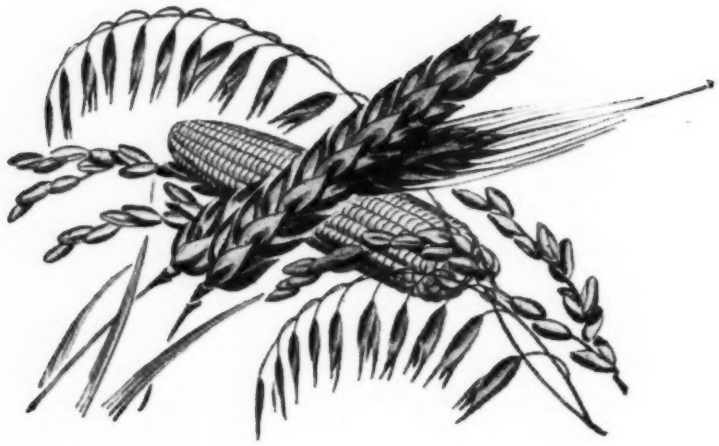

1,850,000 Industrial Injuries

According to the National Safety Council, about one million, eight hundred and fifty thousand disabling accidents occurred in American industry during the year 1943. A staggering figure.

In a critical study of 1009 such accidents, occurring at an ordnance depot between July and November 1943, it became apparent that the greatest number of accidents occurs between 11 A.M. and 12 noon, the last hour before lunch. Among the reasons given appears the important point that little or no breakfast had been eaten by the workers to whom the accidents happened.

Not a few of these accidents probably could have been avoided if the workers to whom they happened, had eaten better breakfasts.

When breakfast is skimpy or is skipped entirely, increasing hunger during the morning hours leads to nervousness, lessened judgment, lessened attention to the work, and the fatigue—realized or unrealized—which so often leads to otherwise avoidable accidents.

A good breakfast is important for the worker. A basic breakfast widely recommended consists of fruit, cereal (ready-to-eat or to-be-cooked) with milk and sugar, toast and butter, an egg or two, or a suitable breakfast meat, and a beverage.

What the dish composed of 1 oz. of cereal (whole-grain, enriched, or restored to whole-grain values of thiamine, niacin, and iron), 4 oz. of milk, and 1 teaspoonful of sugar contributes to this breakfast, is shown in the appended table of composite averages.

Calories	**201**
Protein	**7 Gm.**
Carbohydrate	**32 Gm.**
Fat	**5 Gm.**
Thiamine	**0.19 mg.**
Riboflavin	**0.27 mg.**
Niacin	**1.82 mg.**
Calcium	**158 mg.**
Iron	**1.73 mg.**

The presence of this seal indicates that all nutritional statements in this advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

CEREAL INSTITUTE, INC.
135 SOUTH LASALLE STREET · CHICAGO 3

temporary pleasures, real or artificial.

6. We must find ways to teach persons to think and feel without mind-breaking even as we teach them to run and jump without leg-breaking. They must be equipped with mental 'first-aid kits' and with instructions for their use on the first appearance of mental symptoms.

7. We must secure the acceptance of responsibility for the welfare of the next generation through wise mate selection and the control of breeding by the unfit insofar as eugenics provides sound guidance.

8. We must find or create community agencies to share our concern for health education.

9. We need to remind ourselves of the educational potential in the personal example of a well-liked teacher." (*As doctors, how are we doing? To some, alcohol has become a disease—to others a handicapping habit. Most of the doctors smoke much too much, and know it. Our record, in the profession, of healthy happy marriages—an indication of mental adjustment in life—does not rate too well. Our eating and play habits are often not too commendable. Can we start with ourselves or are we smug and self-satisfied and above criticism? Are we good teachers—by example—of the healthy way of life?*)

This sounds like a broad and difficult program. It would seem that on our plantations this presents to us both a challenge and an opportunity. Can we widen our program and make it as wide and comprehensive as this one is? This not only would bring our people greater health and happiness, but it undoubtedly would bring the industry more man-hours of work. This would seem like a goal worth attaining. Doctors, particularly industrial surgeons (and doctors on the plantations are industrial surgeons) must become the leaders. the sparkplugs, for this program of total good health on our plantations.

Present Trends in Industrial Medicine

EUGENE W. BOGARDUS, M.D.,
Chairman, Industrial Health Committee,
Westchester County Medical Society

IN LINE with many industrial processes, the war has produced great changes in the concepts of industrial medical practice. Prior to the last war industrial medicine, with few exceptions, was engaged in treatment of injuries incurred in employment, mainly first aid. Safety measures were just beginning — compensation laws were new and untried in practice.

During the 1920's emphasis was placed on avoiding accidents, reducing claims for compensation, and accepting only those physically fit for work. Plants engaged physicians to look after plant welfare and weeded out those whose physical makeup seemed to be a liability. Surgery and accident prevention were emphasized.

In the present tremendous increase in industrial activity necessity demanded the employment of the physically handicapped; the limitation, so far as possible, of labor turnover; measures to avoid absenteeism; better job evaluation; and many other measures designed to promote production. The work had to be turned out.

Emphasis was placed on health supervision, plant hygiene, nutrition, prevention of fatigue, and better adjustment of the employee to his job —or more often the job to the available employee. The advent of women into industry led to entirely new developments.

Large plants could afford to spend time and money on the selection and placement of employees, but 65% of all industry is located in plants employing 500 employees or less. This opens the way for the use of part-time medical personnel and the burden of medical supervision in the small plant field becomes the responsibility of the general practitioner in the community. These men have only general medicine knowledge and common sense to guide them.

This leads to a situation in indus-

Westchester Medical Bulletin, 13:5, 12-13, May, 1945.

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Vitamin C	Improves appetite; combats infection and bacteria toxins; lack of this vitamin causes weariness, headaches, restlessness, impaired digestion.

CEVASAL is sold in bottles of 100, 1000, or 25,000 tablets. Attractive single tablet dispensers are available; fixed to walls or posts near the water founts, these dispensers encourage and facilitate use of the tablets by the employes. Prices on request.

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trial medicine comparable to that of public health 30 years ago. Men without special knowledge applied common sense to a few simple public health procedures and from this small beginning evolved the great complex system of public health now available to most suburban and urban centers. The public health movement suffered serious growing pains—lack of funds, lack of trained personnel, lack of equipment, and in many cases the misunderstanding of members of organized medicine. Industrial medicine finds itself compelled to meet demands far in excess of its available assets, and the general practitioner today is as little acquainted with these demands as those of public health three decades ago.

Fortunately it is easy to measure directly the benefit to be derived from industrial health programs — reduction in accidents, limitation of occupational disease, lessening of lost time through illness or absenteeism are reflected in industrial output. The average medical practitioner is placed in a position of being valuable in a rapidly expanding field of medicine. His cooperation, judgment, and medical participation in industrial work will be a contribution worthy of the best medical ideals and can continue to build faith and favorable public opinion for organized medicine.

Industrial Relationships With the Medical Profession

LOUIS J. BERG, M.D.,

Medical Director, Eastern Aircraft, Tarrytown Division

WHEN management asked me to invite our County Medical Society to meet at this plant, I was delighted with the opportunity this visit would give us to discuss some of our problems with you.

The most important factor in this country's tremendous war effort on the home front has been the physical and mental well-being of our workers. As physicians engaged in the task of looking after the health and safety of our citizens, we have played a vital role in meeting the all-important manpower problem. When we consider that industry has had to find a place for the aged, the handicapped, the misfits and the emotionally unstable person, we realize what difficulties have had to be overcome. In the wake of these problems we have had to deal with increased tension, chronic fatigue, disabling neurasthenia and domestic tribulations and maladjustments — all of which, although outside factors were bound to be reflected in the results on the production line.

In meeting these manifold problems, the industrial physician has had to rely on the cooperation of his fellow medical practitioners. That is the reason we are so glad that you could see the worker in action this evening. We tried to be even more practical by setting up the riveting booths, so that you would have the opportunity to use the riveting gun—one of our main tools of production. We wish it would have been possible for you to have used some of the others as well. Your knowledge of actual working conditions will certainly aid you in appraising your patient's occupational complaints.

That leads to the matter of "physician's notes" which we receive in large numbers, and some of which cause us much grief in dealing with the visitor to the plant medical department. Dr. Green and I have accumulated quite a collection of these notes. In the main, you are to be congratulated for displaying such a fine understanding of our problems. For that, we are very grateful. But a few more or less chronic offenders have plagued us with requests for job changes, shift changes and leaves of absence, when it is clear to us that there is a real lack of knowledge of the underlying causes of the employee's complaints.

We are aware of the annoyance some of our workers must cause you in your private offices. Some of these chronic complainers will make the

Westchester Medical Bulletin, 13:5, 12-13, May, 1945.

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Pluravit, the "different" multiple vitamin supplement, was developed especially for industrial workers.

The daily Pluravit ration is only one pellet per day per worker. Experience has demonstrated that this will effectively prevent vitamin deficiency. As a result workers not only enjoy better health but are likely to find greater enjoyment in working, so that production can be maintained at peak levels.

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One* PLURAVIT *pellet contains:

Vitamin A	4000 U.S.P. units
Vitamin B_1	2 mg. (666 units)
Vitamin B_2	2 mg.
Vitamin B_6	0.5 mg.
Calcium Pantothenate	1 mg.
Niacinamide	20 mg.
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Dr. .....

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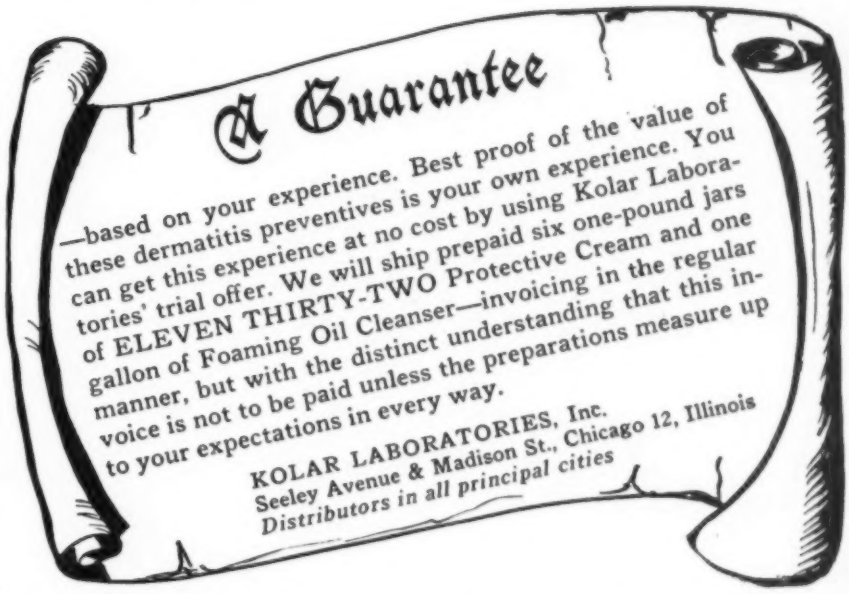
rounds of physician's offices, until the kind of note desired is obtained. We are then forced to turn down the physician's request. Often it is not really the family physician, but one who has seen the worker for the first time, and has written the note just to get rid of a nuisance. When these notes are brought to us, written on an open prescription blank or letter-head, it makes it much more difficult to deal with the worker. It is that doctor's word against ours, and the employee feels that we, in industry, are unjust to him. It would be much better for the physician to send a sealed confidential note, or discuss the problem in private with us over the telephone, so that a clearer understanding can be had, and an amicable solution reached in fairness to the employee and management alike.

When your recommendation as to temporary or permanent placement in another job is justified and practical, we are glad to comply with the request. But sitting-down jobs or certain kinds of light jobs are not always immediately available. Supervision tries to cooperate with us, but they have a production schedule to meet and cannot absorb too many substandard workers.

A worker is often mistaken in his conclusion as to the origin of an ailment or supposed injury. His physician may carelessly concur in such belief, when he has failed to make certain that evidence exists to support his claim. When the physician does make certain by seeing the actual working conditions, or accepting our statement of the facts, then the imagined occupational hazard can be more readily dissipated. The so-called "aluminum poisoning"—a condition thought to be responsible for so many complaints in the early days, but in the past year hardly ever mentioned—is a good illustration in point. Your assurance can be of great help to us in overcoming the mistaken notions of the alarmed employee.

On our part we can do much to enhance your relationship with your patient. Very often we hear your praises sung; at other times we hear you misjudged and misquoted, and we are glad of the opportunity to correct the misinformation. We are ever on our guard to create good will. We know you can do much to maintain the workers' morale and aid industry in reducing absenteeism. We immediately refer to the family physician all abnormal conditions which we uncover in the course of examination in the medical department, and urge the employee to remedy correctible defects. We are glad to furnish you with a statement of the defects found at the pre-employment examination, and supply you with any information we have in our records which will aid you in treating your patient. We are particularly anxious for the physically handicapped and chronically ill to be under your constant supervision, and we encourage periodic visits in order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—based on your experience. Best proof of the value of these dermatitis preventives is your own experience. You can get this experience at no cost by using Kolar Laboratories' trial offer. We will ship prepaid six one-pound jars of ELEVEN THIRTY-TWO Protective Cream and one gallon of Foaming Oil Cleanser—invoicing in the regular manner, but with the distinct understanding that this invoice is not to be paid unless the preparations measure up to your expectations in every way.
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to avoid any possible serious episode.

By means of this evening's plant walk, the film shown by Dr. Johnson and the safety exhibit, we have endeavored to stimulate your interest in the problems of the industrial medical department. We feel that Eastern Aircraft is doing a grand job in providing medical facilities, occupational safeguards and health protection for the worker. Our safety department is performing miracles in protecting the employee at every turn. We are trying to educate him to work in safety at all times, and you can help us in the stupendous task of keeping him healthy, safe and happy in his work.

Recent Advances in the Treatment of Burns

CONRAD R. LAM, M.D.,
Division of General Surgery of the Henry Ford Hospital, Detroit

AT THE meeting of the American Surgical Association last year, Dr. Roy D. McClure read a paper entitled, "The Tannic Acid Treatment of Burns: An Obsequy." It was pointed out that severe if not fatal liver necrosis may occur when tannic acid is used and wound healing experiments show that the coagulum method of treatment retards healing appreciably. A short time ago, a study was made of the treatment of minor burns in large industrial plants. It was found that almost a hundred different remedies were being used. Many of these substances were subjected to critical tests, and without exception, it was found that there was no basis for the claims of the manufacturers that the materials stimulated the healing of burns. It appears now that the best local treatment is a simple one—to cover up the burn with a bland ointment such as petrolatum on fine mesh gauze or even the gauze without the ointment. Recent clinical trials of rayon fabric show that it is an excellent dressing for burns and granulating surfaces. This material will soon be generally available through commercial channels.

It has been shown that extensive washing and "débriding" of a burn do not lessen the incidence of infection. The same may be said with reference to the use of the sulfonamide drugs, both local and systemic. There is some difference of opinion regarding the employment of pressure in the treatment of burns. Most students of the problem believe that a moderate amount of pressure, applied by wrapping elastic bandages about machinist's waste, is beneficial.

General treatment, as well as local treatment, has undergone a change in the last few years. It is recognized that the application of heat by the use of the "burn tent" does more harm than good in the treatment of so-called burn shock. A comfortable environment temperature is the best. It is probable that in the past, excessive amounts of morphine have been given for the supposed great pain of burns; actually the painful phase is largely past when the patient gets to the hospital. The use of blood plasma in severe burns was first advocated by Weiner, Rowlette and Elman of St. Louis in 1936. There was wide acceptance of plasma therapy, and several formulas were devised to indicate the amount which should be given. Harkins' rule (give 100 cc. plasma for each point the hematocrit is above the normal of 45) is as good as any. Recently, a number of investigators have suggested that whole blood may be as good as plasma, and of course it is cheaper and easier to procure. Fox of New York maintains that plasma is unnecessary if enough sodium is given my mouth; he gives this in sodium lactate. His contentions have not been verified. Adrenal cortical extract, desoxycorticosterone acetate, etc., are of no value in burns.

In third degree burns, it is desirable to get the slough off and grafted skin on at the earliest possible time. Connor and Harvey of Yale have published experimental results, indicating that the use of pyruvic acid in starch paste (pH 1.9) will hasten slough separation remarkably. Studies at the Henry Ford Hospital (Lam and Puppendahl) have shown that in the case of small third degree burns on the dog, sloughing is as fast with plain

Presented at the St. Louis Medical Society, April 17, 1945; published in *Weekly Bulletin* of the St. Louis Medical Society, May 25, 1945.

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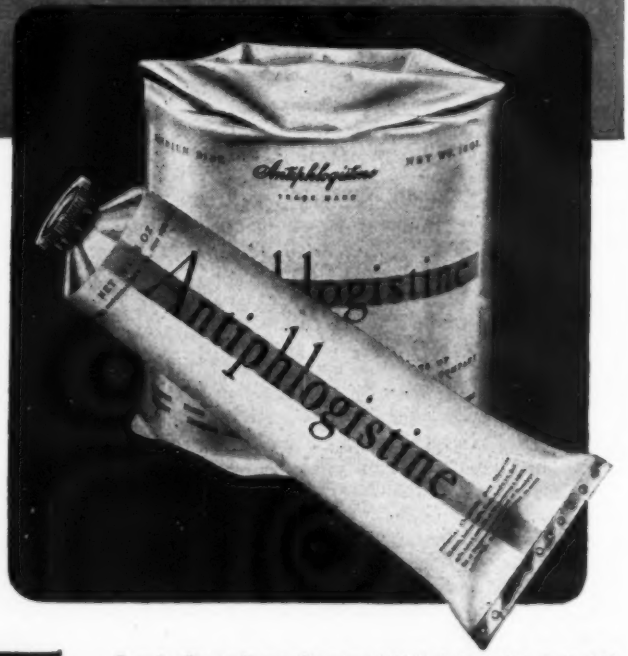
FOR
Pain, Swelling, Soreness



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Teru is a stainless, greaseless and odorless cream for use wherever coal tar therapy is indicated — eczema, psoriasis, dermatitis, pruritus, eczematoid dermatitis, seborrheic dermatitis, occupational dermatoses, folliculitis. Teru is available under prescription at ethical pharmacies in five-pound, one-pound and two-ounce jars.

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The surgeon treating third degree burns should be adept at modern methods of skin grafting, being able to cut split-thickness grafts with the Padgett dermatome, the Blair-Brown knife or modifications of these. Cases are still being seen where extensive third degree areas have been subjected to two or three feeble attempts at Reverdin grafting, and where serious joint deformities have been allowed to develop during periods ranging from six months to two years.

Infection has resulted in loss of grafts in certain cases. The use of penicillin, both locally and intramuscularly, has appeared to be of considerable value. At the present time, it is the policy at the Henry Ford Hospital to give penicillin to all cases of third degree burns on whom more than one stage of dermatome grafting is necessary.

NOTE: Much of the work reported was done under a contract recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Henry Ford Hospital.

Discussion

DR. D. J. VERDA: The history of the tannic acid treatment of burns has been interesting. It is highly complimentary to the Detroit group that they wrote its obsequy. The tannic acid treatment is dead. It has taken us 20 years to come to this realization. Why have we been so slow? In reviewing the work on burns, one might find some flaws. Reports of pathological findings have been very meager. Why have we had so few reports on the pathological findings? It is because of the old-fashioned system we have in this country —the coroner system. The majority of burn-patients are coroner cases, and the coroner does not usually carry out scientific studies on tissues. That is why we have been so slow in realizing that tannic acid does bring about certain detrimental changes, particularly in the liver.

We would like to find out—how does tannic acid bring about central necrosis in the liver? What happens in the urine? Exactly what takes place in the chemistry of tannic acid? Is the kidney able to bring about enzymatic changes of the tannic acid? Is tannic acid excreted as a tannate? In severe cases of burns where tannic acid has not been used, some workers here reported definite changes in the liver eight to 10 days after the burn, while with tannic acid it occurs on the fourth or fifth day.

I think it is highly complimentary for Dr. Lam and the Detroit group to come to the front and remind us that tannic acid treatment of burns is definitely on its way out.

DR. LAM: Those are very good questions. I cannot tell you exactly how tannic acid produces this liver necrosis. The mechanism has been investigated but a satisfactory answer has not been forthcoming. In England, the exact lethal dose of tannic acid for various experimental animals has been worked out. The drug can be detected in the urine and in the blood by suitable chemical tests. I will mention the work of Dr. Frank Hartman of our laboratory who has published a paper indicating that there is destruction of the liver from other agents, notably silver nitrate and zinc peroxide. I have not thought that these findings had any important clinical significance, and Dr. Hartman freely admits tannic acid was the most destructive of any of the agents he tried. I am sorry I cannot answer the questions on the mechanism of action of tannic acid.

Some one asked about bathing in the treatment of burns. I did not mention that and I would say we do not use it. It has been about three years since a patient was put into a tub bath. I know many people have been put in a saline tub and have survived, but it seems to us that involves unnecessary discomfort, since the dressings must be removed periodically without anesthesia. Many of our patients, particularly those with third degree burns, cannot remember anything about their burn treatments in the hospital except the trips to the operating room. Every procedure except the initial dressing has been under anesthesia. I think burns can be treated without tub bathing.

A RECORD low in the mortality rate of industrial policyholders of the Metropolitan Life Insurance Company, exclusive of deaths from enemy action, was reported for the first quarter of 1945. The death rate of 802.4 per 100,000 was about 10% below the figure recorded for this period last year, and slightly below the previous minimum established in 1942.

New England Conference

NEW ENGLAND CONFERENCE of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, under the leadership of JOHN F. KENNEY, M.D., President, held a Spring Meeting on Wednesday, May 2, 1945, in Pawtucket, Rhode Island. The Members of the Conference were the guests of J. & P. Coats (R.I.) Inc. and were welcomed to the Plant by J. COLBY LEWIS, Vice-President and General Manager. Over 80 members of the Conference, with members of the RHODE ISLAND SOCIETY OF INDUSTRIAL PHYSICIANS and a splendid representation of the Rhode Island Industrial Nurses Club enjoyed an excellent luncheon, following which the formal program was carried out in the auditorium of the company. In addressing his remarks to the Conference, Mr. Lewis noted a brief history of the plant and spoke of the fact that the members of the Conference were guests of the largest thread company in the world; he also pointed out that the plant was making a number of war items of vital importance. He noted the appreciation that industry felt to the medical profession for helping to get injured workers returned to their vital jobs as quickly as possible. He stressed the teachings of safety which industry, and particularly his plant, had instituted, and pointed with considerable pride to the record his company holds. He stressed the necessity for continued application of safety principles in all types of work, and felt that it was due to the cooperation between the management and the worker in this particular mill that the safety record had held up as well as it has; and he hoped that the continuation of such cooperation would assist in cutting down lost time due to accident. DR. JOHN E. DONLEY, Medical Director of the new Curative Center in the State of Rhode Island, was the next speaker. He pointed out that the Curative Center will treat only injured workers in industry and has no connection with any veteran or other class organization. The Curative Center is to be used purely by injured workers who are referred to it by their own physicians. The value of this Center will be that it will have a great number of varying therapeutic measures which can be applied for the benefit of certain patients, which patients otherwise would be unable to receive such therapy at the hands of an individual physician, and when these patients are improved they will be returned to their occupation through and only through their original physician. This Curative Center is really a branch of the State Department of Labor, and as such DR. DONLEY feels that it will be of great and lasting value in assisting those who have been injured and come under the Workmen's Compensation Act of the state. DR. ZAMBARANO, Superintendent of the State Sanatorium at Wallum Lake, spoke about tuberculosis in industry and the efforts he was making toward the discovery, prevention and spread of this disease. He felt that, owing to lack of regular physical examinations by the general public, much more tuberculosis got past the stage where it was readily curable to the point where too many cases become hopeless. An x-ray of the chest of every worker in industry should be made in an endeavor to check easily cases which can be readily cured as well as to prevent later cases from contaminating fellow workers. In the future, if the ideas which he has in mind can be carried out throughout this state, tuberculosis will be one of the rarest of diseases among our local population, and he hopes that every village and hamlet will before long be equipped with means to discover and assist in the treatment of tuberculosis. DR. ZAMBARANO'S paper was discussed by DR. DANIEL L. LYNCH, Medical Director, New England Telephone & Telegraph Company, Boston, who agreed in part with DR. ZAMBARANO'S ideas, and expressed himself as wholeheartedly in favor of any system and checking up on individuals in industry which would promote the fall in seriousness which this disease produces. He spoke of the various methods he uses to check and assist in curing the diseases when discovered among the workers of the telephone company. DR. VINCENT J. RYAN, of Providence, spoke on skin conditions in industry. He felt that there were an enormous number of skin rashes which developed while the employees were at work and which were not due to anything that they handled in the course of their jobs; on the other hand he did feel that greater care should be exercised in testing all solutions and powders and other equipment to determine its possible effects on the skin before being put into, and used in, routine production. He spoke of a

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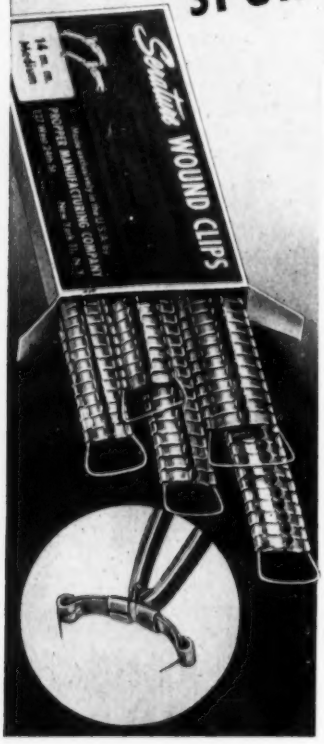

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number of skin diseases which develop which have no bearing on the materials the individual is handling, and discussed how far the Compensation Law should be exercised in the payment for disability. DR. HENRY B. MOOR, Chief Surgeon of the Memorial Hospital at Pawtucket, and Medical Director of the Gorham Manufacturing Company, spoke on severe burns and their treatment. His very clear, concise and able talk was illustrated by lantern slides. Everyone connected with the medical profession who listened to his lucid description of treatment could not help but be impressed by the study and care which DR. MOOR has given this condition.

INDUSTRIAL HYGIENE NEWS LETTER

National Advisory Health Council

PROGRESS and problems in industrial hygiene were presented for consideration by the National Advisory Health Council, meeting at the National Institute of Health in Bethesda, Maryland, June 19 and 20. The Council acts in an advisory capacity to the Surgeon General of the United States, and is vested by law with certain legal responsibilities for the development and direction of the U. S. Public Health Service. DR. CLARENCE C. SELBY, Medical Consultant, General Motors Corporation, is a member. In a brief paper read to the Council, the place of industrial hygiene in the present health picture of the nation was discussed. Activities and organization of the Industrial Hygiene Division, U. S. Public Health Service, and of the industrial hygiene agencies in the states and localities were described. The presentation explored the needs existing for expansion of the industrial health program, in the states and nationally, and candidly described present deficiencies in organization and personnel. Plans for developing service both in the Industrial Hygiene Division and in the States and industrialized areas so as to reach not a portion but the whole of the industrial population, including workers in small plants, were presented in some detail. Emphasis was laid upon the necessity for augmenting industrial health work if past progress is to be continued, and the health problems arising or intensifying as a result of industrial conversion to peacetime production and of technologic and chemical advance are to be solved.

Regional Conference

PROMOTION of more effective State industrial health activity and improvement of industrial medical practice by physicians were the prime purposes of a regional conference held in Chicago, June 8, and attended by representatives of the medical profession and industrial hygiene organizations from Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin. Discussion of recent developments in industrial health, industrial medical services, legislation affecting the field, rehabilitation of handicapped veterans, and other phases of the problem brought out significant advances being made in a number of states. An instance of effective cooperation between industry and the medical profession was described, in which General Motors Corporation has invited the state and county medical societies to hold meetings from time to time in company plants, so as to acquaint local general practitioners with occupational health hazards involved in some of the plant operations. A similar practice is being tried out in a number of Ordnance plants, in order that physicians who treat workers from these plants may learn to differentiate between occupational and non-occupational disease conditions. Among other problems discussed were the reorganization of industrial health activities better to fit local needs and to integrate with local health department work, recent experiments in employer-employee education, educational means for preparing physicians for public health work, and current legal problems. DR. A. J. LANZA, Chairman of the Committee on Professional Relations of the Council

—Continued on page 628.

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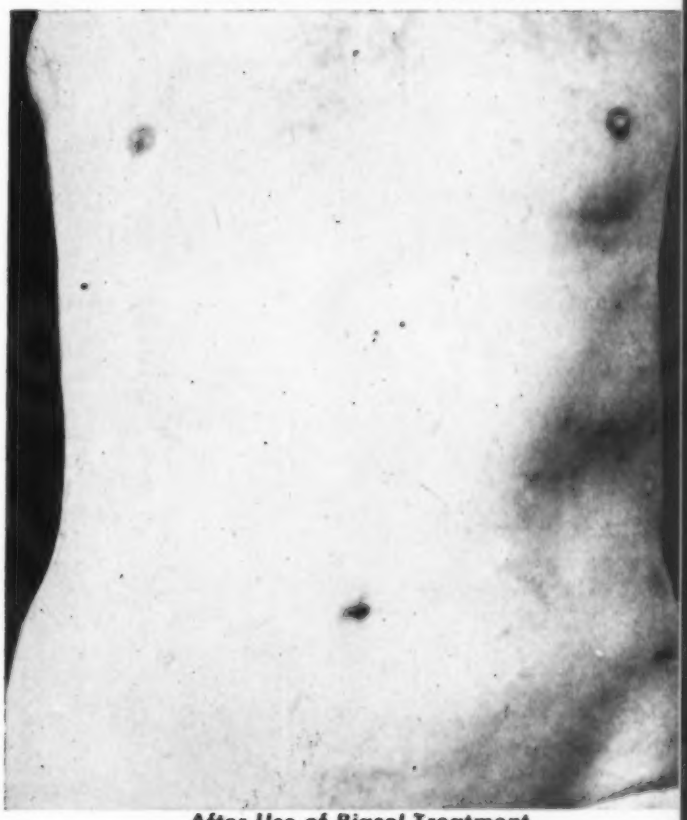

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